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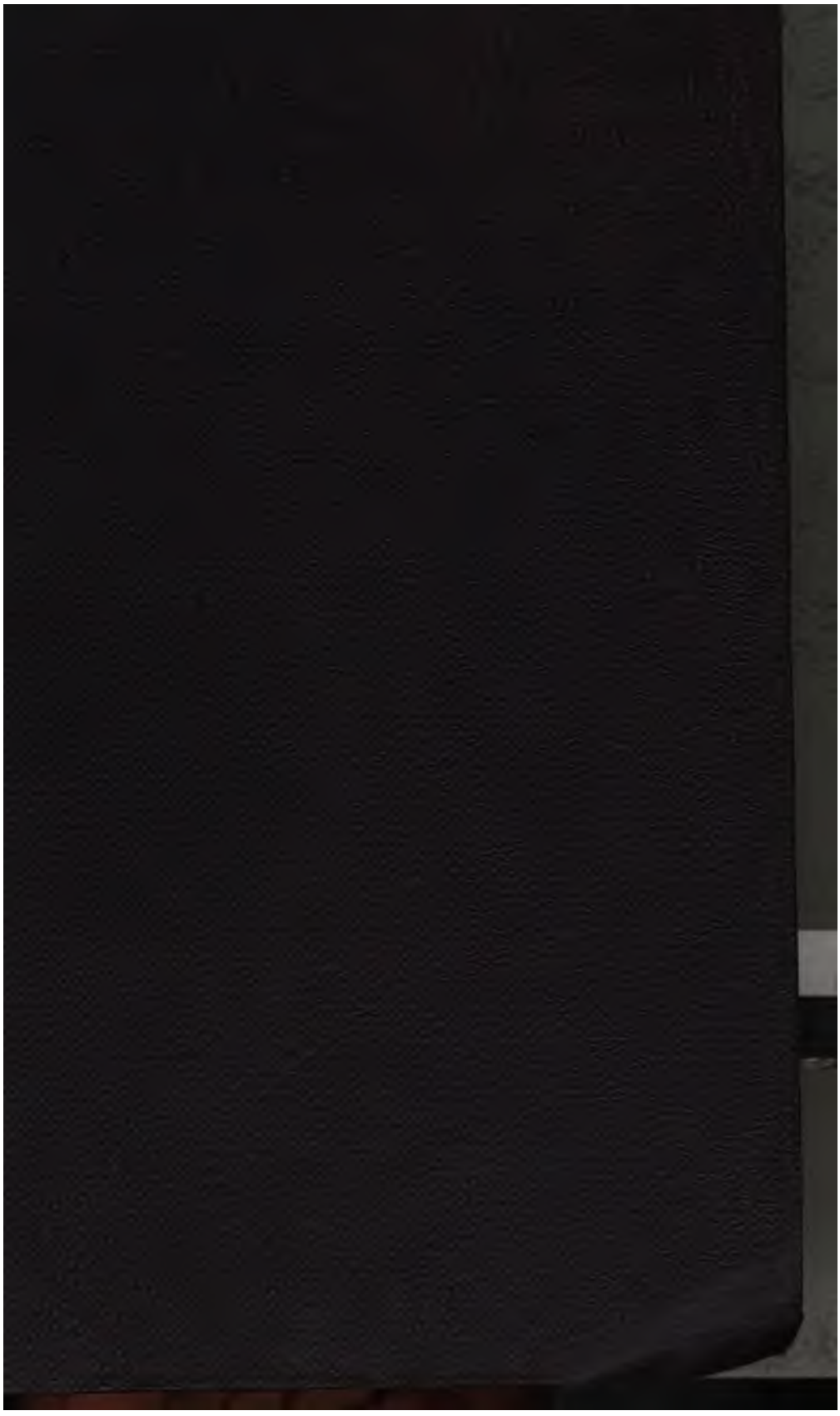

SYSTEM

OF

UNIVERSAL GEOGRAPHY.

SYSTEM

OF

UNIVERSAL GEOGRAPHY,

FOUNDED ON THE WORKS

OF

MALTE-BRUN AND BALBI;

EMBRACING

A HISTORICAL SKETCH

OF THE

PROGRESS OF GEOGRAPHICAL DISCOVERY,

THE PRINCIPLES OF MATHEMATICAL AND PHYSICAL GEOGRAPHY,

AND

A COMPLETE DESCRIPTION, FROM THE MOST RECENT SOURCES,

OF THE POLITICAL AND SOCIAL CONDITION OF

ALL THE COUNTRIES IN THE WORLD;

WITH NUMEROUS STATISTICAL TABLES,

AND

AN ALPHABETICAL INDEX OF 12,000 NAMES.

EDINBURGH:
ADAM AND CHARLES BLACK;
AND LONGMAN, BROWN, GREEN, & LONGMANS,
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PREFACE.

The Publishers of the present Work, when they had completed the English Translation of Malte-Brun's Geography, in nine volumes octavo, were repeatedly urged to publish an abridgment of it in one volume. With this view they engaged the services of several writers, whose talents and studies peculiarly fitted them for the departments respectively allotted them; while the whole Work was, at the same time, placed under the care of a gentleman well qualified to undertake the general superintendence.

Before, however, much progress had been made in preparing the materials for the press, it was discovered that a mere abridgment of Malte-Brun would be very unsatisfactory; and the attention of the Editor having been directed to the second edition of the "Abrégé de Geographie par A. Balbi," he was satisfied that the perspicuous and systematic arrangement of that book offered a better plan for the construction of the present volume. It has accordingly been adopted as the basis of this Work; which, however, is not so much an abridgment of the labours of these two celebrated Geographers, as an entirely new compilation, the Editor having preferred the information communicated by later and more correct writers, to that which was accessible at the time when the large work of Malte-Brun was published.

Of the following Work, Chapter I. of the Introduction was originally written by M. Larenaudiere, Editor of the French Abridgment of Malte-Brun, and was translated by Robert Hamilton, M. D., with considerable modifications and additions. Chapters II. III. and IV. are also translations from the work of Malte-Brun, with similar modifications and additions: Chapter II., by Thomas Galloway, Esq.; Chapter III., by J. P. Nichol, LL.D., Professor of Astronomy in the University of Glasgow; and Chapter IV., by John H. Balfour, M.D., Professor of Botany in the same University. Section 4 of Chapter IV., and Sections 1, 2, 3, of Chapter V., were contributed by Mr. James Laurie, and Section 4 of Chapter V. by Mr. Hugh Smith, being founded principally on the basis of the Abrégé of Balbi. For the Geological Sections of England, Scotland, and France, the Editor is chiefly indebted to Alexander Rose, Esq., of Queen's College, Edinburgh. The remainder of the volume was written by Mr James Laurie, who has also performed the duty of general Editor.

The object kept in view throughout has been to produce a Work on Geography which would be generally useful. The Contributors conceived it to be no part of their business as Geographers to give minute descriptions and long classi-

fied lists of the various objects of Natural History. All that they deemed i necessary to do in this respect, was to give those general views of Natural Scienc connected with Geography which will be found in the Introduction; while, i the body of the work, they have confined themselves, with very few exceptions, t short notices of such objects of Natural History as are conducive to the subsist ence and the comfort of man, or to the promotion of national industry and th useful arts—objects, in short, the nature of which all can understand and appre ciate. As a book of reference, its value will be understood at once from th simple fact, that the Index contains a much larger number of names than is t be found in any English Gazetteer.

The sources from which the Work has been compiled are generally indicate in their proper places throughout the volume. The writers have stated nothin but on what they conceived to be good authority, though in many cases they hav found the authorities so perplexingly at variance as to make it extremely difficul to determine which ought to be followed.

They have not allowed themselves to indulge in those moral, economical, and political speculations, with which some Geographers largely intersperse thei works, conceiving that the space necessary for these may be much better em ployed in the statement of facts, from which the readers may draw inferences fo themselves. They have confined themselves to such subjects as they considere within their legitimate province, and such as are calculated to be useful to th great bulk of the reading Public. With this view, particular attention has bee directed to the Sections embracing the British Islands, and the principal Britis Colonial Possessions, which, in addition to the strictly Geographical details, wil be found to contain a larger amount of statistical information connected with thei natural productions, commerce, and manufactures, than has yet appeared in an Work of the same size. To facilitate the conversion of Foreign Weights an Measures into the British standard, part of an able article on that subject, fro the Seventh Edition of the Encyclopædia Britannica, has been prefixed to th Work.

No pains have been spared to procure the latest and most correct accounts o the various countries of the world. The most recent books of travels have bee consulted, and due advantage has been taken of the Transactions of the Roya Geographical Society of London—the most valuable contributions which moder research has made to Geographical Science. In short, the Editor flatters himself that in respect of accuracy and extent of information, the present Work will b found, at the least, not inferior to any similar publication.

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WEIGHTS AND MEASURES

USED IN GREAT BRITAIN AND IN FOREIGN COUNTRIES.

GREAT BRITAIN.—The following is a tabular view of the Weights and Measures according to the present state of the law, throughout the British empire. In some of the Colonies, however, and particularly in India, a variety of other weights and measures are still in use, which will be found under their proper heads. It is only necessary to observe, that all the quantities in the same horizontal line of the same table are equal to each other.

TROY WEIGHT.

Grains.	*Dwts.*	*Oz.*	*Lb.*
24	1	...	...
480	20	1	...
5760	240	12	1

APOTHECARIES' WEIGHT.

Troy Grains.	*Scruples.*	*Drams.*	*Oz.*	*Lb.*
20	1	...	...	...
60	3	1	...	...
480	24	8	1	...
5760	288	96	12	1

In these two weights the grain, the ounce, and pound are the same. The troy is used for the precious metals and for jewels, as also in trying the strength of spirituous liquors, and for comparing different weights with each other. Four grains troy make a carat. But this term when applied to gold denotes its degree of fineness. Thus, the weight of any quantity or compound of that metal being supposed to be divided into 24 equal parts, if the mass be pure gold, it is said to be 24 carats fine. If it consist of 23 parts of pure gold and 1 of alloy, it is said to be 23 carats fine, and so on. Diamonds and pearls are also weighed by carats of 4 grains, but 5 diamond grains are only equal to 4 troy grains. This sort of weight is not very different all over the globe. There are 150 diamond carats in the troy ounce. Apothecaries' weight is chiefly used for medical prescriptions; but drugs are mostly bought and sold, especially in wholesale, by avoirdupois weight.

AVOIRDUPOIS OR COMMERCIAL WEIGHT.

Troy Grains.	*Drams.*	*Oz.*	*Lb.*	*Stones.*	*Qrs.*	*Cwts.*	*Ton.*
437·5	16	1	...	...	...	...	...
7000	256	16	1	...	...	...	...
98000	3584	224	14	1	...	...	...
196000	7168	448	28	2	1	...	...
784000	28672	1792	112	8	4	1	...
15680000	573440	35840	2240	160	80	20	1

The above lb. of 7000 troy grains was formerly subdivided into 7680 avoirdupois grains, 10 of which made a scruple, 30 a dram, and 480 an ounce. The troy pound is less than the avoirdupois in the proportion of 144 to 175, or of 14 to 17 nearly; but the troy ounce is greater than the avoirdupois in the proportion of 192 to 175, or of 79 to 72 nearly.

MEASURES OF LENGTH.

Inches.	*Links.*	*Feet.*	*Yards.*	*Pole or Perch.*	*Chains.*	*Furlongs.*	*Mile.*
7·92	1	...	..	...	...	...	...
12	1·515	1	...	...	...	...	...
36	4·545	3	1	...	...	...	...
198	25	16·5	5·5	1	...	...	...
792	100	66	22	4	1	...	...
7920	1000	660	220	40	10	1	...
63360	8000	5280	1760	320	80	8	1

Three inches make a palm, 4 inches a hand, 5 feet a pace, and 6 feet a fathom. In cloth measure, 2¼ inches = 1 nail, 4 nails = 1 quarter, and 4 quarters = 1 yard.

MEASURES OF SURFACE.

Square Inches.	Square Links.	Square Feet.	Square Yards.	Square Pole or Perch.	Square Chain.	Square Rood.	Acre.
62·726	1	...	...	...		...	...
144	2·295	1	...	...		...	...
1296	20·661	9	1	...	...	...	...
39204	625	272·25	30·25	1	...	...	...
627264	10000	4356	484	16	1	...	...
1568160	25000	10890	1210	40	2·5	1	...
6272640	100000	43560	4840	160	10	4	1

In the superficial measurement of stone, brick, or slate work, 36 square yards are termed a rood, and 100 square feet of flooring a square. There are 1728 cubic inches in the cubic foot, and 27 cubic feet in the cubic yard; 40 cubic feet of rough, or 50 of hewn timber, make a load or ton. A cubic yard of earth is called a load.

IMPERIAL LIQUID AND DRY MEASURE,

Deduced from the Standard Gallon containing 10 lbs. avoirdupois of distilled water at the temperature of 62° Fahrenheit, and Barometer 30 inches.

Pounds of Water.	Cubic Inches.	Gills.	Pints.	Quarts.	Pottles.	Gallons.	Pecks.	Bushels.	Coomb.	Quarter.
1·25	34·659	4	1	...	...	...	...	...	...	...
2·5	69·318	8	2	1	...	...	...	...	...	...
5	138·637	16	4	2	1	...	...	...	...	...
10	277·274	32	8	4	2	1	...	...	...	...
20	554·548	64	16	8	4	2	1	...	...	...
80	2218·191	256	64	32	16	8	4	1	...	...
320	8872·763	1024	256	128	64	32	16	4	1	...
640	17745·526	2048	512	256	128	64	32	8	2	1

This measure came first into operation 1st January 1826, but has only been compulsory as the sole legal measure of capacity since 1st January 1836. The peck, bushel, coomb, and quarter are dry measures only.

FOREIGN.—In the following general comparison of the principal foreign weights and measures with the British, instead of the term *imperial*, which alone must be nearly unintelligible to foreigners, and indeed has become next to superfluous after every other standard has ceased to be legal in this country, we shall use the term *British* to denote such of the standards as are uniform, and *troy* and *avoirdupois* to express the two different kinds of weight respectively.

Algiers.—Since the French conquest, the metrical system and *système usuel* of France are generally used by European merchants. The metalli of oil = 37·375 lbs. avoirdupois; and 100 rotoli = 119 lbs. avoirdupois. The metical = 73 troy grains. The Turkish pic used for cloth = 24·5 British inches; but the Moorish pic is only three fourths as long; and 16 tarries = 1 caffise = 8·75 British bushels.

Arabia.—The weights and measures of Egypt are much used where the sway of Mehemet Ali has extended. Besides these, 200 rattles = 100 maunds = 10 frazils = 1 bahar = 222·5 lbs. avoird.

Argentine Republic.—Same as in Spain.

Austria.—Of the weights, 32 loths = 16 oz. = 4 quarters = 1 commercial lb.; and 100 lbs. = 1 centner = 123·56 lbs. avoird. Also 20 lbs. = 1 stone. The Vienna mark of 4333 grains troy is used for gold and silver. Five such marks make nearly 6 marks of Cologne. Of Vienna measures, 6 feet make one klafter or fathom = 6·23 Brit. feet; 1 ell = 30·6 Brit. inches; 4000 klaftern = 1 posting mile = 4·71 Brit. miles; and the joch = 6889 Brit. sq. yds. Also 70 kopfen = 40 masses = 4 viertels = 112·46 Brit. gall. Of wine, 32 eimers = 1 fuder; and 30 eimers = 1 dreyling. Eight achtels of corn = 4 viertels = 1 metzen = 1·69 Brit. bushel, and 30 metzen make 1 muth. At Trieste, the woollen ell = 26·6 Brit. inches; the silk ell = 25·22 Brit. inches; the eimer or orna of wine = 12·45 Brit. gallons; the barile = 144·5 Brit. gall. The orna of oil = 14·17 Brit. gall.; and the stajo of corn = 2·272 Brit. bushels. But sometimes the weights and measures of Venice are used here.

In public and official matters, the decimal system of France was in effect adopted, [illegible] a different nomenclature, in the Austrian states of Italy in 1804. Thus

10,000 grani=1000 denari=100 grossi=10 oncie=1 libra nouva=1 kilogramme=2·2086 lbs. avoird.; 1000 atomi=100 ditti=10 palmi=1 metre=39·3708 Brit. inches; and 1000 copi=100 liti=10 mine=1 soma=1 hectolitre=2·7512 Brit. bushels. The decimal system is principally used in public affairs, the old weights and measures being in more general use for ordinary trade. In Milan, the mark=3627 grains troy; the lb. peso grosso=2·3343 lbs. sottile=1·6818 lb. avoird.; and the oil rubio=47·5 same lbs. The wine brenta=15·72 Brit. gall.; the corn stajo=2·008 Brit. pecks. In Venice, the lb. peso grosso=1·0519 lb. avoird.; the lb. sottile=·6643 lb. avoird.; and the mark=3681·5 grs. troy. The woollen braccio=26·6 Brit. inches; the silk braccio =·248 same inches; the wine seccho=2·376 Brit. gall.; the oil miro=3·354 Brit. gall.; and the corn stajo=2·20 Brit. bushels.

Australia.—Same as in Britain.

Baden.—One hundred lbs.=10 stones=1 centner=50 kilogrammes=110·2429 lbs., avoird. There are 2 feet in the new aune=6 decimetres=23.62 Brit. inches. The morgen of land=36 French ares=·8896 Brit. acre. Also 150 litres=1 ohm=33·015 Brit. gallons; and 20 malters of corn=1 last=30 hectolitres=10·32 Brit. quarters.

Bavaria.—The centner or quintal=100 lbs.=5 stones=56 kilogrammes=123·5 lbs. avoird. Gold and silver are weighed by the Cologne mark of 3608 troy grains. The ell=32·8 British inches; the eimer of wine=60 maas=8·12 Brit. gallons; and 12 viertels=6 metzen=1 sheffel=9·98 Brit. bushels. In the old system of Augsburg, 100 lbs. heavy weight=108·3 lbs. avoird.; and 100 lbs. light weight=104·23 lbs. avoird. The mark=3643 troy grains, and is divided into 16 loths=64 quintins.

Belgium.—In 1820, this country and Holland being under one government, the French metrical system was introduced into both, but with the old Dutch nomenclature, as follows. Ten korrels=1 wigtje=1 gramme=15·434 troy grains; and 1000 wigtjes=100 loods=10 ons=1 pond=1 kilogramme=2·20486 lbs. avoird. The apothecaries' new pound is divided into 12 oz.=96 drams=288 scruples=5760 grains=5787 grains troy. Ten palms=1 elle=1 metre=39·3708 Brit. inches; also 1 mijle=1 kilometre=1093·633 Brit. yds.; and 100 square elles=10 sq. roedes=1 sq. bunder=1 are=119·6033 Brit. sq. yds. The cubic elle=1 stère=1·30802 Brit. cubic yd.; and 100 vingerhoeds=10 maatjes=1 kan=1 litre; and 100 kans=1 vat liquid measure=1 hectolitre=22·009 Brit. gallons. Also 100 kops=10 schepels=1 mudde or zak dry measure=1 hectolitre=·3439 British quarter.

Of the old systems still partially in use in many places, the Brabant lb.=1·0335 lb. avoird.; the ell=27·58 Brit. inches; and the league=6076 Brit. yds. The aam of 50 stoops=32·4 Brit. gallons; the velte=4·1. Brit. gall.; and 37·5 viertels=1 last =82 Brit. bushels. The Antwerp silk ell=27·32 Brit. inches, and the woollen ell=26·97 of same inches.

Brazil.—In general the same as in Portugal. But in trade the following are also in use. The lb., of which 99=100 lbs. avoird. Five varas=6 British yds.; and 4 covadoes=3 Brit. yds. The medida of Rio Janeiro, of which 100=61.1 Brit gall.; and 12 alqueires=12·86 Brit. bushels. The canada of Bahia=1·667 Brit. gall.; and 7 alqueires=5.817 Brit. bushels. The alqueire of Maranham=1·11 Brit. bushel.

Bremen.—The lb. consists of 16 ounces, and the lispond of 14 such lbs., of which 116=1 centner=127·44 lbs. avoird. Hence 10 lbs. of Bremen make nearly 11 avoird. The Cologne mark is used for gold and silver. The ell of 2 feet=22·76 Brit. inches, and 180 quarts=45 stubchens=20 viertiels=1 ahm=31·5 Brit. gallons. Six ahms=1 fuder of Rhenish wine, and 44 stubchens=1 ahm of French wine. In corn measure, 640 spinets=160 viertels=40 scheffels=4 quarts=1 last=9·77 British quarters.

Brunswick.—The centner consists of 114 lbs., and 100 lbs.=103 lbs. avoird. Two feet=1 ell=22·46 Brit. inches. Forty stubgens=1 wine ahm=32.28 Brit. gall. Forty himtens of corn=4 scheffels=1 wispel=34·2 Brit. bushels.

Buenos Ayres.—The same as in Spain.

Burman Empire.—Most commodities are bought and sold by weight. Of rice, 64 sales=16 vis=4 saits=1 ten or basket=57·36 lbs. avoird., but generally reckoned at half a cwt. Other grain, pulse, fruit, salt, and also lime, are measured. One hundred kaits=1 vis or paiktha=3·59 lbs. avoird.; and 150 vis=1 candy=500 lbs. avoird.

Canada.—The same as in Britain, except that the old English measures of capacity are still partially used, as also the old French minot=1·0556 Brit. bushel; or 45 minots=49 Winchester bushels, though commonly reckoned at 50.

Canary Isles.—The same as in Spain; but in the corn trade, 4·5 fanegas of wheat or barley, and 3·167 of maize or Indian corn, are reckoned to the Winchester quarter.

Candia.—The oke = 2·75 lbs. avoird., and the quintal = 126 of same lbs. The ell or pik = 25·11 Brit. inches; the dennum measure of surface = 40 sq. yds. The mistach is a variable measure of wine from 3 to 5 Brit. gall.; that of oil is more nearly 3 gall. Corn is measured by the carga = 4·19 Brit. bushels.

Cape of Good Hope.—The Dutch standards, which were formerly used here, have now in a great measure been superseded by the British. One hundred Dutch lbs. = 108·923 lbs. avoird. The muid of wheat weighs about 110 lbs. Dutch, or fully 119·6 avoird.; and 100 Dutch ells = 75 47 Brit. yds.; also 100 morgen = 201 Brit. acres. In corn measure, 4 schepels = 1 mudde or muid = 3·06 Brit. bushels; and 4 ahms = 1 leaguer = 126·63 British gallons.

Ceylon.—For foreign commodities, the British weights are generally employed. The candy or bahar = 500 lbs. avoird.; and the garce = 82 cwts. 2 qrs. 16·5 lbs. The bale of cinnamon = 92½ lbs. avoird. Of the native measures, 192 seers = 8 parrahs = 1 amomam = 5·57 Brit. bushels; the last of corn = 6·54 Brit. quarters; and 300 canadas = 75 welts = 1 leaguer in the retail of arrack = 125 Brit. gall.; but in wholesale, the leaguer of arrack = 80 welts. Besides the British standards of length and surface, 40 coornies in the land measure of Kandi = 4 peylas = 1 amomam = 2·7344 Brit. acres.

Chili.—In general the same as in Spain. But 24 lbs. of Chili = 25 of Spain = 25·36 lbs. avoird., and 27 varas = 25 British yards.

China.—Liquids and grain are bought and sold by weight, of which 1000 cash = 100 candereens = 10 mace = 1 tael = 363·33 grains troy; and 1600 taels = 100 catties 1 pecul = 133·33 lbs. avoird.; so that three peculs = 400 lbs., 84 catties = 1 cwt., and 12 taels = 1 lb. But in money weight, the tael is about 3·5 grains less. Of the measures, 10 punts = 1 covid = 14·625 Brit. inches; or 32 covids = 13 Brit. yds. The li = 180 fathoms = 682 Brit. yds., and 200 lis = 1 degree of the meridian.

Cleves.—In general the same as in France. At Rastia, the stago of corn = 4·125 Brit. bushels, and the barile of wine = 8·8 Brit. gallons.

Cuba.—Generally the same as in Spain. The following are also used in trade: 100 lbs. = 4 arrobes = 1 quintal = 101·75 lbs. avoird. The vara = 33·333 Brit. inches; the fanega = 2·9 Brit. bushels; the arroba for wine or spirits = 3·42 Brit. gallons.

Denmark.—Of the weights, 320 lbs. = 20 lispounds = 1 skippund = 3·143 British cwts., and 100 lbs. = 1 centner = 110·25 lbs. avoird. Gold and silver are weighed by the Copenhagen mark of 8 ounces = 3533 grains troy. Two Rhineland feet = 1 ell = 24·75 Brit. inches; and 2000 rodes = 1 mile = 4·864 Brit. miles. Eight pots = 4 kans = 1 viertel = 1·7 Brit. gall.; 30 viertels = 1 hogshead = 51 Brit. gall.; 4 ankers = 1 ahm = 33·23 Brit. gall.; and 144 pots = 8 skops = 1 barrel or tonde = 3·63 Brit. bushels. Also 12 barrels = 1 last of corn = 5·778 Brit. quarters.

Egypt.—Of the weights, 144 dirhems = 12 ounces = 1 lb. or rail = 15·75 oz. avoird., and 400 dirhems = 1 okr or oke = 2·75 rails = 2·75 lbs. avoird. Also 100 rails = 1 cantar or charter, from 98 to 99 lbs. avoird. The common cubit = 22·687 Brit. inches, the cubit used for Indian goods = 21 Brit. inches; the cubit of Constantinople and the Levant = 26·5 Brit. inches. Of corn measure, 24 rooba = 6 ardebs = 1 ardeb = 4·847 Brit. bushels. But various other weights and measures are to be found in some parts of Egypt.

France.—The metrical system, whose multiples and subdivisions all proceed decimally, was first used in 1795, and is founded upon the dimensions of the earth: the ten millionth part of the meridian arc between the pole and equator, being denominated a metre, forms the unit of length. The other units are derived from it, as the are of surface, the stere of solidity, the litre of capacity, the gramme of weight, the *franc*. The latter denomination is used to denote the weight now used by bankers, and with the thousandth part, being prefixed to any of these units so as to denominate its decimal subdivisions: while the sort of Greek denominations, deca or dekare for tens, hecto or hundred, and a thousand, and myria for thousand, being prefixed, denote its decimal multiples. Thus, a decimetre means the tenth of a metre, and a decametre ten metres.

The metre is equal to 3 decimetres = 39 centimetres = 393·7 millimetres = 3·28083 Brit. feet, or 39·37079 Brit. inches, and 5½ metres = 6 Brit. yards nearly. The 1000 metres (or kilometres) to a myriametre. Kilometre or metrical mile = 3280·899 Brit. feet = 1093·633 yards, or nearly ⅝ of a mile.

The are or metrical rood, containing 100 square metres = 1·1 decametres = 119·6 square yards = 0·0247 Brit. acres. And 100 ares = 10 decametres = hectare = 247·1180 Brit. acres, and 1 hectare or myriametre square = 2·47 Brit. acres.

The stere or cubic metre = 10 decisteres = 1·308022 Brit. cubic yard; and 10 steres = 1 decastere.

The litre or cubic decimetre = 10 decilitres = 100 centilitres = 61·027052 Brit. cubic inches; and 50 litres are nearly 11 Brit. gallons. Also 100 litres = 10 decalitres = 1 hectolitre = 2·751207 Brit. bushels; and 32 hectolitres are nearly equal to 11 Brit. quarters, and 100 hectolitres = 10 kilolitres or cubic metres = 1 myrialitre = 34·390086 Brit. quarters.

The gramme is a weight equal that of 1 cubic centimetre of water at its maximum density. It contains 10 decigrammes = 100 centigrammes = 15·434 troy grains; and 1000 grammes = 100 decagrammes = 10 hectogrammes = 1 kilogramme = 2·679514 lbs. troy = 2·204857 lbs. avoird. Also 100 kilogrammes = 10 myriagrammes = 1 metrical quintal = 220·486 lbs. avoird.; and 10 quintals = weight of a cubic metre of water = 1 millier or marineton = 19 Brit. cwt. 2 qrs. 20 lbs. 13·75 oz.

The *Système Usuel*, or Binary System of the French, was introduced in 1812, for the accommodation of retail trade, to make a sort of compromise with the common people, who shewed an irreconcileable aversion to the innovations of the metrical or decimal system. It has the metrical standards for its basis; but their divisions, &c. instead of being decimal, are chiefly binary, that is, they proceed principally by continually halving or doubling some of these standards, though partly according to other divisions of the old system; and instead of the metrical vocabulary, the names of ancient weights and measures are employed, annexing the term *usuel* to each. Thus, the toise usuel = 2 metres = 78·74158 Brit. inches. The pied usuel is one sixth of the toise, and is subdivided into twelfths or inches, &c. The aune usuelle = 12 decimetres = 1·2 metre = 47·2449 Brit. inches. The litron usuel = 1 litre = 1·7608 Brit. pint. The Boiseau usuel is one eighth of the hectolitre, and = 2·7512 Brit. gallons. The livre usuelle is half the kilogramme, and = 1·10243 lb. avoird. The halves, quarters, eighths, &c. of the most of the above are also in use.

Frankfort on the Maine.—Of the weights, 128 drachmes = 32 loths = 2 marks = 1 heavy lb. = 1·1143 lb. avoird. The light lb. is similarly divided, but only = 1.0318 lb. avoird., so that 108 of the light lbs. make only 100 of the heavy or centner weight. The Cologne mark, here reckoned = 3611 grains troy, is used for gold and silver. The Frankfort foot contains 11·42 Brit. inches, and the ell 21·54. The Brabant ell is generally used for Dutch goods, and the Paris aune for French. Eighty old or 90 new mass (each of 4 schoppen) are equal to 20 viertels = 1 ohm = 31·57 Brit. gall.; and 16 sechters = 8 metzen = 4 simmers = 1 malter or achtel = 3·16 Brit bushels.

Genoa.—There are two sorts of pounds, the peso sottile lb., and the peso grosso lb. The latter is a tenth part heavier than the former, so that the cantaro of 100 lbs. peso sottile = 69·89 lbs. avoird., and the cantaro of 100 lbs. peso grosso = 76·88. The latter is used for bulky commodities, and the former for gold, silver, and all articles of small bulk. The palmo = 9·725 Brit. inches, and 2·333 palmi = 1 braccio. The canna is of three sorts: the canna piccola used by tradesmen = 9 palmi, the canna grossa of the merchants = 12 palmi, and the custom-house canna = 10 palmi. Of corn measure, 96 gombette = 8 quarti = 1 mina = 3.31 Brit. bushels. Also 100 pints = 2 barili = 1 mezzarola of wine = 32·67 Brit. gall.; and 64 quateroni = 4 quarti = 1 oil barile = 14·23 Brit. gall.

Germany.—Considerable diversity of weights and measures is to be found in the various states into which this extensive country is divided, and the most important of them will be found noticed separately. But not a few of their standards, though differing in amount, are similar in their multiples and subdivisions. Of the weights, 1024 hellers = 312 pfennings = 128 quentins = 32 loths = 16 ounces = 2 marks = 1 commercial lb.; and 5760 grains = 288 scruples = 93 drams = 12 oz. = 1 apothecaries' lb.; also 4352 eschen = 512 hellers = 256 pfennigs = 64 quentins = 16 loths = 8 oz. = 1 Cologne mark = 3608 grains troy. By this gold and silver are weighed; and the fineness of gold is expressed by 24th parts or carats as in Britain, but the fineness of silver by 16th parts. For jewellery there is a carat of 3·171 grs. troy. Of the measures, 144 inches = 12 feet = 6 ells = 2 clafters = 4 ruthe. The Rhinland foot used by surveyors = 12·36 Brit. inches; the long mile = 10,126 Brit. yds., the short mile = 6859, and the geographical mile = 8101 Brit. yds. The Rhinland morgen of land = 10,185 Brit. sq. yds.

Gibraltar.—Besides the British standards, the following Spanish are also used: The arroba = 26 lbs. avoird.; the quintal = 100 lbs. = 101·75 lbs. avoird; the corn fanega = 1·55 Brit. bushel; the pipe of 117 gallons = 105 Brit. gall.; the liquid arroba = 277 Brit. gall.; and the wine gallon = 1.094 Brit. gall.

Goa.—The same as in Portugal, except that the candy of 20 maunds = 495 lbs. avoird. This, in the measurement of grain, is reckoned to be nearly 14 Winchester bushels.

Greece.—The same as in France.

Guiana (British.)—In general the same as in Britain; but the following, originally introduced by the Dutch, are also used: the lb. = 1·09 lb. avoird.; and the ell of 26 inches = 27 British inches.

Guiana (Dutch.)—In general the same as in Holland, but chiefly upon the old system.

Hamburg.—Of the weights, 128 drachmes = 32 loths = 16 oz. = 2 marks = 1 lb. = 1·0682 lb. avoird.; 112 lbs. = 8 lisponds = 1 centner = 119·64 lbs. avoird.; and 5 centners = 2 shipfunds. Ten lbs. = 1 stone of wool or feathers = half a stone of flax. Of butter, 280 lbs. form the great, and 224 the small tonne. A pipe of oil is reckoned at 820 lbs. Gold and silver are weighed by the Cologne mark, and their fineness valued as explained under the head Germany. Of measures, 6 palms = 2 feet = 1 ell = 22·578 Brit. inches. The Rhinland foot of engineers and surveyors = 12·36 Brit. inches. The Brabant ell, commonly used for piece goods, = 27·585 Brit. inches. Also 160 quarters = 40 stubgens = 20 viertels = 5 eimers = 4 ankers = 1 ahm = 31·87 Brit. gall.; and 24 ankers or 6 ahms = 1 fuder. Of wine, 6 tierces = 4 oxhofts or hogsheads = 1 faas; but these are of various sizes. Of corn, 160 spints = 40 himtens = 20 faas = 10 scheffels = 1 wisp or wispel = 29 Brit. bushels; two wisps = 1 last of barley or oats = 7·25 Brit. quarters; and 3 wisps = 1 last of wheat or rye = 1 stock of barley or oats = 10·87 Brit. quarters.

Hanover.—The lb. = 1·073 lb. avoird.; 112 lbs. = 1 centner; and 20 lbs. = 1 stone of flax or 2 stones of wool. Also 600 lbs. = 51 stubgens = 2 tonnes of honey; and 3360 lbs. = 240 lisponds = 12 shipfunds = 1 last. The Cologne mark is used for gold, silver, and silk. Two feet = 1 ell = 22·91 Brit. inches; the mile = 6·5676 Brit. miles. The morgen land measure = 2·5625 Brit. roods. Also 80 kannen = 40 stubgens = 4 ankers = 2·5 eimers = 1 ahm = 34·24 Brit. gallons; and 6 ahms = 4 oxhofts = 1 fuder of wine. Of corn, 96 himtens = 16 malters = 2 wisps or wispels = 1 last 82 Brit. bushels.

Hayti.—Port au Prince.—Principally the old system of France, together with the old English wine gallon.

Hesse-Cassel.—The lb. = 17·03 oz. avoird. The ell = 22·59 Brit. inches; the acre = ·5894 Brit. acre; the liquid ohm = 34·94 Brit. gall.; and 16 corn metzen = 4 himtens = 1 viertel = 4·42 Brit. bushels.

Hesse-Darmstadt.—Two lbs. = 1 French kilogramme = 2·20486 lbs. avoird. Ten feet = 1 klafter = 2·5 metres = 8·2023 Brit. feet; five ells = 3 metres = 3·2809 Brit. yds.; four morgens = 1 hectare = 2·47114 Brit. acres. The liquid ohm = 160 litres = 35·22 Brit. gallons; the corn malter = 1·28 hectolitre = 3·522 Brit. bushels.

Holland.—In 1820. the decimal system of France was introduced, but with the old Dutch nomenclature, as explained under the head Belgium. Of the old weights still used in many places, 10,240 aas = 320 engels = 16 oz. = 2 marks = 1 Dutch lb. troy = 1·0851 lb. avoird. There are also 16 oz. in the commercial lb. = 1·0893 lb. avoird., and 100 commercial lbs. = 1 centner. The old Amsterdam foot = 11·15, and the ell = 27·08 Brit. inches; the Rhinland foot = 12·36, and the Flemish or Brabant ell = 27·58 Brit. inches. Nineteen Dutch leagues make one degree of the meridian.

Japan.—The weights are almost the same as in China. The inc = 6·25 Brit. feet; but the measures of capacity have not been compared.

Java.—In this and the other Dutch colonies in India, the weights of China are ordinarily employed; but the pecul, instead of being exactly 133·33 lbs. avoird. is = 135·625 lbs. Of rice, the coyang = 3581 lbs. avoird., and the timbang = 10 sacks = 5 peculs = 678·125 lbs. The Dutch troy mark of 9 reals, = 3798 Brit. troy grains, is used for gold and silver. The foot = 12·36, and the ell = 27·75 Brit. inches. The kanne, liquid measure, = ·3282 Brit. gall., and 396 rands = 1 leaguer of arrack = 133·33 Brit. gall.; but 360 rands = 1 leaguer of wine.

India.—Grain is generally sold by weight, as also liquids, except wines and spirits, which at all the three presidencies are sold by British measures. Of the Bengal weights, 940 chittacks = 40 seers = 1 factory maund = 74·67 lbs. avoird., or two-thirds of a British cwt. The bazaar maund is one tenth greater than the factory, and similarly divided. Gold and silver are weighed by the new tola or sicca of 180 grains troy. Two cubits = 1 gux = 1 Brit. yd. The coss or mile of Bengal = 2000 yards, and 1600 sq. yds. = 20 cottahs = 1 biggah. At Bombay, 40 seers = 1 maund = one quarter of a British cwt., and 20 maunds = 1 candy = 5 cwts., which in corn is counted at

24·5 Brit. bushels. At Madras, 320 pollams = 8 vis = 1 maund = 25 lbs. avoird., and 20 maunds = 1 candy. The covid = 18·6 inches, but the British yard is used for cloth, and in land measure, 24 maunies = 1 cawney = 6400 Brit. sq. yds. Also 320 measures = 400 marcals = 80 parahs = 1 garse or gursay The marcal = 750 Brit. cubic inches. When grain is sold by weight, 9256·5 lbs. avoird. are reckoned to the garse.

COMMERCIAL WEIGHTS, &c. of INDIA, and of several adjacent States, with their Equivalents in British, Bengal Factory, Madras, and Bombay Weights.

Commercial Weights, &c.	*Avoirdupois.*			*Bengal Factory.*			*Madras.*			*Bombay.*		
	Lbs.	*Oz.*	*Dr.*	*Mds.*	*S.*	*Ch.*	*Mds.*	*Vis.*	*Pol.*	*Mds.*	*S.*	*Pice.*
Acheen bahar of 200 catties,	423	6	13	5	26	13	16	7	19	15	4	27
Acheen guncha of 10 nelly,	220	0	0	2	37	13·7	8	6	16	7	34	8·6
Anjengo candy of 20 maunds,	560	0	0	7	20	0	22	3	8	20	0	0
Batavia pecul of 100 catties,	135	10	0	1	32	10	5	3	16	4	33	22·4
Bencoolen bahar,	560	0	0	7	20	0	22	3	8	20	0	0
Bengal factory maund,	74	10	10·7	1	0	0	2	7	35·7	2	26	20
Bengal bazar maund,	82	2	2·1	1	4	0	3	2	11·3	2	37	10
Bombay candy of 20 maunds,	560	0	0	7	20	0	22	3	8	20	0	0
Bussorah maund of 76 vakias,	90	4	0	1	8	5·6	3	4	35·2	3	8	27·9
Bussorah maund of 24 vakias,	28	8	0	0	15	4·3	1	1	4·8	1	0	21·4
Calicut maund of 100 pools,	30	0	0	0	16	1·1	1	1	24	1	2	25·7
China pecul of 100 catties,	133	5	5·3	1	31	6	5	2	26	4	30	14·3
Cochin candy of 20 maunds,	542	8	0	7	11	2·6	21	5	36·8	19	16	12·9
Gombroon bazar candy,	7	8	0	0	4	0	0	2	16	0	10	21·4
Goa candy of 20 maunds,	496	0	0	6	25	2·9	19	6	16	17	27	4·3
Junkceylon bahar of 8 capins,	485	5	5·3	6	20	0	19	3	12	17	13	10
Madras candy of 20 maunds,	500	0	0	6	28	0	20	0	0	17	34	8·6
Malacca bahar of 3 peculs,	405	0	0	5	16	15	16	1	24	14	18	17·1
Mocha bahar of 15 frazils,	450	0	0	6	0	1	18	0	0	16	2	25.7
Muscat custom-house maund,	8	12	0	0	4	11	0	2	32	0	12	15
Mysore candy of 7 morahs,	560	0	0	7	20	0	22	3	8	20	0	0
Pegu candy of 150 vis,	500	0	0	6	28	0	20	0	0	17	34	8 6
Penang pecul of 100 catties,	133	5	5·3	1	31	6	5	2	26	4	30	14·3
Surat maund of 40 seers,	37	5	5·3	0	20	0	1	3	37·9	1	13	10
Su at pucca maund,	74	10	10·7	1	0	0	2	7	35·7	2	26	20
Tillicherry candy of 20 maunds,	600	0	0	8	0	2	24	0	0	21	17	4·3

Ionian Isles.—The present British system was introduced in 1828, when the libbra sottile was made equal to 1 lb. troy, the libbra grossa to 1 lb. avoird., the talanto to 100 lbs. avoird., the stadio of 40 carnaco to 1 Brit. furlong, the barrel to 16 Brit. gallons, and the kilo of corn to 1 Brit. bushel. Of the old weights, 44 okes = 1 quintal = 123·15 lbs. avoird., or 40 okes = 1 cwt. nearly. Of the old measures, the Zante braccio for cloth = 27·18 Brit. inches, the silk braccio = 25·37 Brit. inches; the Zante barile = 14·68, and the Corfu barile = 15 Brit. gallons. Also 8 misure = 1 corn moggio of Zante = 4·63 Brit. bushels. In land measure, 24 zappade = 8 misure = 1 moggio = 2·4 Brit. acres.

Lubeck.—The Cologne mark of 3608 troy grains is used for gold and silver, and 112 lbs. = 8 lisponds = 119·67 lbs. avoird. Two feet = 1 ell = 22·7 Brit. inches; and 80 kannes = 40 stubgen = 20 viertels = 1 ahm = 31·87 Brit. galls. Also 96 scheffels = 24 barrels = 8 dromts = 1 last of wheat or rye = 11·04 Brit. quarters. The last of oats = 12·95 quarters, and is similarly subdivided.

Lucca.—The common lb. = 0·7448 lb. avoird., but the lb. peso grosso = 8·234 lbs. avoird. or 11 Leghorn lbs. The braccio for woollens = 23 8 Brit. inches, but that for silk is an inch less. There are 4 braccio in the canna. The coppo for oil = 21·97 Brit. gall. Wine is sold by the Leghorn barile of 20 fiasci, and corn by the staja = two-thirds of a Brit. bushel.

Madeira.—In general the same as in Portugal; but in corn measure 23 alquieres are = 24 of Lisbon, and in wine measure 12 almudos are = 13 of Lisbon.

Majorca.—One hundred rottolos or lbs. = 1 cantaro Berberesco = 88·2 lbs. avoird. = 104 rottollos = 4 arrobas = 1 quintal = 91·73 lbs. avoird.; and 312 rottollos = 3 quintals = 1 carga. Also 108 rottolos = 12 quartins or cortans = 1 odor of oil. The canna = 67·5 Brit. inches. Of wine, 6·5 corters = 1 quartin = 5·97 Brit. galls.; and 6 barcellas of corn = 1 quartera = 1·94 Brit. bushel.

Malacca.—One hundred catties = 1 pecul = 135 lbs. avoird.; 3 peculs make 1 bahar; and 500 gantons = 50 measures = 1 last = 29 Brit. cwt. nearly. Also 40 peculs = 1 coyan of salt or rice. A kip of tin = 41 lbs. avoird. The buncal, = 832 grains troy, is used for gold and silver. The covid = 18·125 Brit. inches.

Malta.—One hundred rottoli or lbs. = 1 cantar = 174·5 lbs. avoird. Gold and silver

are weighed by the lb. of 12 oz. = 4886 grains troy. Eight palmi = 1 canna = 82 Brit. inches; and 16 square tumuli = 1 salma land measure = 4·44 Brit. acres. The wine barile contains 9·17, and the oil caffiso 4·375 Brit. gall. Two caffisos make a barile. The salma corn measure = 7·875 Brit.

Marocco.—The rottolo or commercial lb. = 1·19 lb. avoird., and 100 such lbs. = 1 quintal. The market lb. is one half heavier, or = 1·785 lb. avoird. By it, iron, bees' wax, and provisions are sold. The canna for cloth = 21 Brit. inches, but the measures of capacity are very variable.

Mauritius.—In government affairs the British system is used, but in ordinary business something near the old system of France, reckoning the quintal of 100 lbs. poids de marc = 108 lbs. avoird.; 20 quintals = 1 French ton; 100 lbs. French to the bag of coffee, 150 to the bag of rice, and 250 to the bale of cotton. Also 15 French feet are reckoned = 16 Brit. feet, 7 aunes = 9 Brit. yds., 1 arpent = 1·04375 acre, 1 velt = 2 old English wine gallons, and 30 velts = 1 cask.

Mecklenburg.—The weights are chiefly those of Lubeck and Hamburg, but 100 Rostock lbs. = 1 Brit. cwt. There are 2 feet in the Rostock ell = 22·67 Brit. inches, and 1 scheffel of corn = 1·07 Brit. bushel. The liquid measures are those of Lubeck.

Mexico.—In general the same as in Spain; but the British yard and French aune are also in use for European goods.

Minorca.—The weights and dry measures are the same as in Majorca; and, except the gerra or jar of two quarters, = 2·65 Brit. gall., the other measures are the same as in Spain.

Mocha.—Of the weights, 150 maunds = 15 frazils = 1 bahar = 450 lbs. avoird.; 48 carats = 3 coffola = 2 miscals = 146·74 grains troy; 10 coffolas = 1 vakia, and 87 vakias = the weight of 100 Spanish dollars. The covid = 19, the guz = 25 Brit. inches; 8 noosfias = 1 gudda = 1·8 Brit. gallon; and 40 kellas dry measure = 1 tomand, which, of rice, is reckoned to weigh 168 lbs. avoird.

Modena.—The Modena libbra or lb. = 0·7045 lb.; the Reggio lb. = 0·7274 lb. avoird. and 100 lbs. = 1 quintal. The Modena braccio = 24·31; and the braccio of Reggio = 20·85 Brit. inches. In land measure, 72 tavole = 1 biolca = 2·8036 Brit. roods. Corn is sold by the stajo, = 1·94 Brit. bushel.

Moldavia.—In general the same as in Turkey; but in common trade, 25 okes of Galatz are reckoned = 2 Russian poods; 2400 okes = 7 centners = 700 lbs. of Vienna.

Montevideo.—Same as in Spain.

Mozambique.—One frazil = 12 lbs. avoird., and 20 frazils = 1 bahar.

Muscat.—Twenty-four cuchas = 1 maund = 8¾ lbs. avoird.

Naples.—One hundred rottoli or lbs. = 1 cantaro grosso = 196·45 lbs. avoird.; 1800 oz. = 150 lbs. = 1 cantaro piccola = 106·07 lbs. avoird.; and 7200 acini = 360 trapesi = 12 oz. = the lb. of 4950 grains troy, by which gold and silver are weighed. Of the measures, 96 inches = 8 palmi = 1 canna or ell = 83·05 Brit. inches; 15 palmi make 2 passi, and 7000 palmi = 1 mile = 2018 Brit. yds. There are 900 sq. passi in the moggia of land = ·8315 Brit. acre. Sixty caraffi = 1 baril of wine or brandy = 9·6 imp. galls.: 24 barili = 2 botte = 1 carro; 14 barili = 1 pipe; and 256 quarti = 16 staja = 1 salma of oil = 34·91 Brit. gall., and is reckoned to weigh 324 lbs. avoird. Four quarti of corn = 2 mezzetti = 1 tomole = 1·519 Brit. bushels. At Gallipoli, 320 pignatti = 10 staja = 1 salma of oil = 34·11 Brit. gall. The salmi at Bari = 36·42 such gallons.

Nassau.—The standards are founded on the metrical system of France. Ten inches = 1 foot = half a metre = 19·685 Brit. inches; 10 feet = 1 perch, and 100 square perches = 1 morgen = 25 ares = ·6170 Brit. acre.

New Brunswick.—Same as in Britain.

Newfoundland.—Same as in Britain.

New Granada.—Same as in Spain.

Norway.—The same as in Denmark.

Nova Scotia.—The same as in Britain.

Oldenburg.—The weights are those of Hamburg. Twelve inches = 1 foot = 11·65 Brit. inches; and the ell contains 22·76 of same inches. Also 104 kannes = 4 ankers = 1 ohm; 3 ohms = 2 oxhofts; and 144 scheffels = 18 tonnes = 12 malters = 1 last = 80·69 Brit. bushels.

Parma.—Of the weights, 300 ounces = 25 lbs. = 1 rubbio = 18·08 lbs. avoird. The braccio for measuring cloth = 25·35 Brit. inches, which exceeds that used for silk by 1·95 inch. There are 12 inches in the braccio di ligno used by surveyors, = 21·34 Brit. inches; and 6 bracci = 1 perch. Also 288 sq. perches = 72 tavole = 6 tari = 1 biolca = nearly ·75 Brit. acre; and 16 quarterole = 1 stajo of corn = 1·413 Brit. bushel.

Persia.—The weight chiefly used in commerce is the batman, which not only is of different amount in different districts, but depends also on the kind of article to be weighed. At Tabriz, 600 miscals = 300 derhams = 6 rattles = 1 batman = 6·34 lbs. avoird., which is only half the batman of Cherray. There is a derham of nearly 150 grains troy, by which gold and silver are weighed, and which exceeds the derham of Bushire by nearly 7 grains. Pearls are weighed by the abas of 2·25 troy grs. The measures are not less variable than the weights. The guz or common cubit = 25 Brit. inches, and the royal guz is one-half longer. The archin of Tabriz = 44 Brit. inches. There are 20 leagues or parasangs in a degree of the equator; but it is by the fursoch or augage, that is, the space of about four or five Brit. miles walked over by a horse in an hour, that moderate distances are usually reckoned. Greater distances are estimated by the day's march of a caravan, which may be about 30 miles. In corn measure, 200 sextarios = 50 chenicas = 25 capichas = 1 artaba = 1·039 Brit. bushels.

Peru.—The same as in Spain.

Philippine Isles.—The same as in Spain, except that the Chinese pecul is sometimes used.

Poland.—Of the weights, 128 drachms = 32 loths = 16 oz. = 1 lb. = 0·89414 lb. avoird.; 32 lbs. of Poland = 1 stone, and 160 such lbs. = 1 centner. The Cologne mark is used for coined gold and silver, but the Warsaw mark = 3113 grains troy for the uncoined. Two feet = 1 ell or lokci = 22·68 Brit. inches. The mile is the twentieth part of a degree of the meridian. There are 300 perches in the acre or morgen, = 1·384 Brit. acre; and 30 morgens make 1 wloka. Also 16 kwaterkas = 4 kwartas = 1 garniec = 4 French litres = 0·88039 Brit. gall.; and 25 garniecs = 1 becaksa. Of corn, 128 kwartas = 32 garniecs = 4 cwiercs = 1 korsec = 3·5214 Brit. bushels.

Popedom or Papal States.—Of the commercial weights, 6912 grani = 288 denari = 12 once = 1 Roman lb. = ·7477 lb. avoird. The same lb. is also used by apothecaries, and for gold and silver; and 100 such lbs. = 10 decine = 1 quintal. The foot = 11·72 Brit. inches; 8 palmi = 1 mercantile canna = 6·52917 Brit. feet. The Roman mile = 1628 Brit. yds. Also 128 fogliette = 32 boccali = 1 barile of wine = 12·84 Brit. gall.; 80 boccali = 1 soma of oil = 36·14 Brit. gall.; and 88 quartucci = 22 scorzi = 4 quarte = 1 corn rubbio = 8·1 Brit. bushel. In Ancona, 100 lbs. = 73·75 lbs. avoird.; the braccio = 25·33 Brit. inches; and 24 boccali = 2 barili = 1 wine soma = 18·9 Brit. gall. Also 8 coppe = 1 corn rubbio = 7·87 Brit. bushels. In Bologne, the lb. = ·798 lb. avoird., and the foot = 15 Brit. inches.

Portugal.—Of the commercial weights, 32 marks = 16 oz. 1 arratel or lb. = 1·0119 lb. avoird.; and 32 arratels = 1 arroba. There are 4 arrobas in the quintal, and 54 in the tonelada. The apothecaries' lb. is only three-fourths of the commercial. There are 8 inches in the palmo craveiro, = 8·622 Brit. inches; the pe or foot = 1·5 palmo; 5 palmos = 1 varo; and though three palmos are usually said to form the varo, it is more nearly 26·67 Brit. inches. Ten palmos = 1 braço; the miles 2253 Brit. yds.; and 3 miles = 1 league. Of land, 4840 square varos = 1 geira, and 7 geiras make nearly 10 Brit. acres. Of liquids, 48 quartilhos = 12 canadas = 2 pots = 1 almude of Lisbon = 3·64 Brit. gal.; there are 18 almudes in the baril, 26 in the pipe, and 52 in the tonelada. In dry measure, 240 quartos = 60 alquieres of Lisbon = 15 fanegas = 1 moyo = 22·39 Brit. bushels. The almude of Oporto = 5·61 Brit. gall., and the alquiere of Oporto = ·465 Brit. bushel.

Prussia.—Of the commercial weights, 128 quintins = 32 loths = 2 Cologne marks = 1 lb. = 1·0311 lb. avoird.; and 110 lbs. = 1 centner or quintal = 113·42 lbs. avoird. There are 4000 lbs. in the ship last; and the apothecaries' lb. is only two-thirds of the commercial. The Cologne mark is used for gold and silver. The Rhinland foot = 12·356 Brit. inches; the ell = 26·26 of such inches; and 2000 perches = 1 mile = 8237 Brit. yds. There are 180 sq. perches in the morgen or acre, = 3054 Brit. sq. yds.; and 30 morgen = 1 hufe. Also 120 quarts = 4 ankers = 2 eimers = 1 liquid ohm = 30·23 Brit. gall.; 3 eimers = 1 oxhoft; 100 quarts = 1 tun of beer; and 48 quarts = 16 metzen = 1 corn scheffel = 1·512 Brit. bushel. Various old measures are still partially in use.

Prusso-German Commercial League or Zoll-Verein is composed of Anhalt Bernbourg, Anhalt Cothen, Anhalt Dessau, Baden Bavaria, Birkenfeld (part of Oldenburg), Frankfort, Hesse Cassel, Hesse Darmstadt, Hesse Homburg, Hohenzollern Hechengen, Hohenzollern Sigmaringen, Nassau, Prussia, principalities of Reuss, Saxony, Saxe-Altenburg, Saxe-Coburg-Gotha, Saxe Meiningen, Saxe Weimar, Schwarzburg Rudolstadt, Schwarzburg Sondershausen, Waldeck (exclusive of Pyrmont), Wurtemberg. The basis of their tariff is the centner of Baden = 50 French kilogrammes, and divided into 100 pounds or livres usuelles of France. Hence the

zoll centner of 100 lbs. = 110·2429 lbs. avoird. The following relative values are given in the tariff: —

935·422 zoll lbs. = 1000 Prussian lbs.
1120· ... ... = 1000 Bavarian lbs.
2000· ... ... = 1000 kilogrammes.
935·456 ... ... = 1000 Würtemberg lbs.
933·673 ... ... = 1000 Saxon (Dresden) lbs.

Or 14 ... ... = 15 Prussian lbs. nearly.
28 ... ... = 25 Bavarian lbs.
2 ... ... = 1 kilogramme.
14 ... ... = 15 Würtemberg nearly.
14 ... ... = 15 Saxon (Dresden) lbs. nearly.

Russia.—Of the weights, 96 zolotnicks = 32 loths = 1 lb. = ·90264 lb. avoird. With this lb., which is used for most purposes, gold and silver are also weighed, it being divided into 6528 grains. The Nuremberg lb. of 5527 grains troy is used by the apothecaries. The British and Dutch feet and inches are employed. The Russian foot = 13·75 Brit. inches; 16 verchoks = 1 archine for cloth = 28 Brit. inches; and 1500 archines = 500 sagenes = 1 verste or mile = 1167 Brit. yds. Also 2400 sq. sagenes = 1 deciatine = 2·7 Brit. acres; and 100 tcharkeys = 2·705 Brit. gall. Of corn, 64 garnietz = 32 tchetverkas = 8 tchetveriks = 4 payaks = 2 osmines = 1 chetwerk = 5·77 Brit. bushels. Various old standards are partially in use in different parts of the empire.

Sardinia.—In Turin, 12 oz. = 1·5 mark = 1 lb. = 8133 lb. avoird.; 25 lbs. = 1 rubbio; and the mark of 3795 grs. troy is used for gold and silver. The raso or ell = 23·6 Brit. inches; the mile = 2697 Brit. yds.; the giornate = ·938 Brit. acre; the wine rubbio = 2·07 Brit. gall.; and the corn sacco = 3·17 Brit. bushels. In Nice, 150 lbs. = 1 quintal = 103·14 lbs. avoird.; the ell = 3·8975 Brit. feet; 12 rubbi = 1 charge = 20·75 Brit. gall.; but the charge of corn = 4·4 Brit. bush. In Cagliari, 12 oz. = 1 lb. = ·875 lb. avoird.; the raso = 21·63 Brit. inches, and the restiere = 4·04 Brit. bushels.

Saxony.—In Dresden, the lb. = 1·0293 lb. avoird.; 110 lbs. = 1 centner; the mark = 3602 grs. troy; two feet = 1 ell = 22·3 Brit. inches; 3200 feet = 1 mile = 9914 Brit. yds.; the morgen or acre = 1·261 Brit. acre; the liquid eimer = 14·84 Brit. gall.; the scheffel = 2·859 Brit. bushels. In Leipzig, 32 loths = 1 lb. = 1·0301 lb. avoird.; the centner = 110 lbs. = 113·32 lbs. avoird. Two feet = 1 ell = 22·24 Brit. inches; 60 ells = 1 schock; the liquid eimer = 16·69 Brit. gall.; the old scheffel for corn = 3·612 Brit. bushels. The Dresden scheffel, which is one third greater, is now the general standard.

Siam.—The common weight is the catty = 2·67 lbs. avoird., which is double the Chinese catty; but the pecul, containing only 50 catties, is just equal the Chinese pecul. Also 8 spans = 4 cubits = 1 fathom = 6·5 Brit. feet; 20 fathoms = 1 sen; but a square area of 20 fathoms to the side is likewise named a sen.

Sicily.—The cantarro grosso = 192·53 lbs. avoird.; the cantarro sottile = 175·03 lbs. avoird. The lb. = ·7014 lb. avoird. Gold and silver are weighed and valued as at Naples; 94 cubic French feet of the old standard = 5 salmes = 1 ship ton. Oil is sold in Messina by the caffiso, = 2·58 Brit. gall. The canna = 81·35 Brit. inches; the wine tonna = 31·4 Brit. gall.; the corn salma = 7·61 Brit. bush., and the salma grossa of Leghorn = 9·47 Brit. bushels.

Singapore.—The Chinese pecul of 133·33 lbs. avoird. is the usual weight. The covid for cloth = 18 Brit. inches; the gantang, by which corn, fruit, and liquids are occasionally sold, = 1·04 Brit. gall. European commodities are often sold by British weights and measures.

Spain.—Two marks = 1 lb. = 1·01443 lb. avoird.; the arroba consists of 25, and the quintal of 4 lbs. The mark used for gold and silver is = 3550 grains troy. Twelve pulgadas = 1 Burgos foot = 11·128 Brit. inches; 4 palmos = 1 vara or ell = 33·38 Brit. inches. The estadale = 12 feet; 8000 varas = 1 league = 7·418 Brit. yds. A degree is divided into 20 marine leagues; 5378 sq. varas = 1 arcada of vine land; and 6000 sq. varas = 1 fanegada of corn land. The greater or wine arroba = 3·54 Brit. gall., the less or oil arroba = 2·77; the pipe = 27 of the greater arrobas, or 34·5 of the less; the corn fanega = 1·55 Brit. bushels; and 12 fanegas = 1 cahiz. But a variety of local standards is also in use.

Sweden.—The lb., victual weight, = 6563 grains troy; the lispund contains 20, the stow 32, the centner 120, the wang 165, and the skeppund 400 such lbs. Two feet = 1 ell = 23·38 Brit. inches; 8 ells = 1 ruthe; 2250 ruthes = 1 mile = 11,689 Brit. yds.; the tunnaland = 1·22 Brit. acre. The liquid kanna = ·5756 Brit. gall.; the fuder

contains 300, the pipe 180, the oxhufvud 90, and the ahm 60 kanns. The corn tunna = 4·029 Brit. bushels. But various other measures and local standards are in use.

Switzerland.—In 1837 the 12 cantons, Berne, Zürich, Lucerne, Friburg, Zug, Soleure, Basel, Aargau, Thurgau, Schaffhausen, Glarus, and St. Gallen, adopted the following standards, founded on the decimal system of France: 32 loths = 1 lb. = half a kilogramme = 1·1024 lb. avoird.; 2 feet = 1 ell = 6 decimetres; and 1 stund = 4800 metres = 5249 Brit. yds. The liquid mass = 1·5 litre = 2·64 Brit. pints; ten mass of corn = 1 viertel = 15 litres = 1·65 Brit. peck. In Geneva, besides the French system, 100 lbs. gros poids = 121·43 lbs. avoird.; 100 lbs. petit poids = 101·19 lbs. avoird. The winechar = 120·71 Brit. gall.; the coup of corn = 2·13 Brit. bushels.

Tripoli.—One hundred rottoli = 1 cantar = 109·71 lbs. avoird.; the caraffa of oil weighs 3·125 rottoli. The great pik = 26·42, and the small = 19·03 Brit. inches; the wine barile = 14·25 Brit. gall.; and 4 temen = 1 corn hueba = 2·95 Brit. bushels.

Tunis.—One hundred rottoli = 1 cantaro = 111·75 lbs. avoird.; for cotton the pik or ell = 19·23, for silk and linen = 25, and for woollen = 26·5 Brit. inches. The wine millerole = 14·15, and the oil mettar = 4·27 Brit. gall. The corn caffiz = 1·918 Brit. quarter.

Turkey.—The oke = 2·8286 lbs. avoird.; 1 oil almude should weigh 8 okes; 100 rottoli = 44 okes = 1 quintal = 124·46 lbs. avoird. The great pik = 27·9, the small = 27·06 Brit. inches; the berri or mile = 1826 Brit. yds.; the liquid almude = 1·143 Brit. gall.; the corn fortin = 3·84 Brit. bushels.

Tuscany.—The quintal or cantaro = 100 lbs. = 74·86 lbs. avoird.; 20 soldi = 1 braccio = 22·979 Brit. inches; the mile = 1808 Brit. yds.; the saccato of land = 5928 Brit. sq. yds.; the baril for wine = 10·03, and for oil = 7·36 Brit. gall. The corn stajo = 2·676 Brit. pecks; and 24 staja = 1 moggio.

United States of America.—Chiefly the same as in England prior to the imperial system. But instead of the cwt. they generally use simply 100 lbs. which are sometimes called a quintal. The barrel of flour weighs 196 lbs.; the hhd. of Indian meal 800 lbs.; and the barrel of salt meat 200 lbs.

Wallachia.—The weights are those of Moldavia. The killow of Brailow, of about 400 ocche = 1·5 killow of Galatz = 18 killows of Constantinople = 9 sacche of Leghorn. In other respects the same as in Turkey.

West Indies (British.)—In general the same as in Britain; but Spanish measures are partly used in Trinidad, and the old system of France in St. Lucia.

West Indies (French.)—Same as in France.

West Indies (Dutch.)—Chiefly the old system of Amsterdam. In Curaçoa, the Spanish varo is also employed.

West Indies (Danish.)—Same as in Denmark. The British yard and French aune are sometimes employed.

West Indies (Swedish.)—Chiefly the same as in Sweden.

Würtemberg.—The lb. = 1·0314 lb. avoird.; the foot = 11·25 Brit. inches. The toise = 6 feet; the ell = 24·18 Brit. inches. The mile is the fifteenth of a degree. The morgen or acre = 31·518 French ares; and 1·5 morgen = 1 juchart. The fuder of wine = 388·16 Brit. gall. The scheffel of corn = 4·88 Brit. bushels.*

* These Tables are extracted from the ENCYCLOPÆDIA BRITANNICA, seventh edition.

INTRODUCTION.

CHAPTER I.

HISTORICAL SKETCH OF THE PROGRESS OF GEOGRAPHICAL DISCOVERY

When the second father of our race came forth from his ark, on the mountains of Ararat, the face of the earth was desolate, "the world was all before him where to choose," and geographical science had to begin her course. The situation, however, of Ararat, is as much a matter of dispute as that of Eden; the Bible, the only record of these events, supplies no clue to guide us to the spot; neither does it tell us the time or the manner in which the new generations of men proceeded to, and took possession of, the countries in which we find them at the dawn of history. The book of Genesis contains, indeed, the names of the descendants of Noah, among whom the earth was divided after the flood; but, as none of these (except only such as refer to the Hebrews themselves and their immediate neighbours) can be satisfactorily identified with nations and countries, we are compelled to descend at once through the dark interval of many centuries, to inquire, What was the extent of the sacred historian's personal acquaintance with the earth's surface? and that we shall find to have been extremely limited. He speaks quite indefinitely of the east and the west; of the south and the north he seems to have known as little; and, in short, the geography of the Israelites in his days may be said to have comprised only Syria, Palestine, Egypt, and the north-west parts of Arabia. Even in the times of the kings and the prophets of Israel and Judah, the Hebrew geography seems to have extended no farther than to Assyria, Media, Persia, and Ethiopia. Solomon, indeed, sent ships to Tarshish and Ophir, but the navigators were Phenicians, and the commerce thus begun lasted too short a time for the nation to acquire much knowledge of foreign countries.

The great geographers of those early ages, the most renowned explorers of unknown regions, were the *Phenicians*, a branch of the great Semitic, or Aramean, family of nations, which occupied the regions between the Mediterranean Sea and the Tigris, and extending southward from Mount Taurus to the Indian Ocean. Phenicia itself was one of the smallest countries of antiquity, comprising only a narrow slip of land on the coast of Syria, about 120 miles in length, and probably nowhere more than 18 or 20 in width. This short line of coast, rich in bays and harbours, was bounded by lofty mountains covered with forests, which supplied building materials for the ships and houses of the Phenicians. Seven cities occupied various points on the coast, and between them were a number of smaller towns, the abodes of industry and enterprise, forming, as it were, one city, extending along the whole line of coast and the adjoining islands: this chain of cities, with their harbours and numerous fleets, must have afforded a spectacle then unequalled in the world, impressing the stranger who visited them with the highest idea of the opulence, the power, and the spirit of the people. Precluded by the nature of their country from extending their dominion by land, and invited by the numerous facilities for intercommunication presented by the adjacent sea, the Phenicians seem early to have directed their attention to foreign commerce. From Homer we learn, that even before his time, they were the general carriers of the Mediterranean; and in the books of Kings we are informed, that their trade extended to regions of the east, or the south, so remote that three years were spent in each voyage.

For the better carrying on of this trade, they established factories and built cities on every part of the Mediterranean shores. Carthage, the daughter of Tyre, rivalled her mother-city in wealth and power, and extended the Punic dominion over a

portion of Africa and Europe. Beyond the straits of Gibraltar, the Phenicians possessed the present Cadiz, and several other stations. They explored the west coast of Africa to an extent now unknown; they visited the British Islands for tin; and with the sacred isle of the west, the modern Ireland, they appear to have been familiarly acquainted, if they did not actually colonize it. They have even been supposed to have reached America; and certainly there are passages of the Greek and the Roman writers that will hardly admit of any other interpretation.* Judah and the land of Israel supplied the Phenicians with the staple necessaries of life, corn, wine, and oil; Arabia furnished them with wool, frankincense, and myrrh; while gold, silver, tin, and coarser produce of other kinds, were derived from the distant coasts of Europe and Africa.

Besides their maritime commerce, they appear to have also traded overland with the interior countries of Asia. The great point to which this trade was directed was Babylon; and there still remain, in the desert, between Syria and the Euphrates, the splendid ruins of Tadmor, or Palmyra, which appears to have been one of their stations, and which, long after the fall of Tyre and Sidon, continued to enjoy great commercial prosperity, till ruined by the vengeance of the ruthless Aurelian, in the third century of the Christian era. Babylon herself, the most splendid and renowned of eastern cities, besides being the capital of a mighty empire, was also the seat of a widely extended commerce with all parts of Asia. Most advantageously situated for communicating by land with the most fertile regions of the east, her situation was equally convenient for maritime and for river navigation. The ancient geographers, travellers, and historians, uniformly represent the Babylonians as a people fond of magnificence, and accustomed to a variety of artificial wants, which could have been supplied only by commercial relations with many countries, some of them very remote. They were celebrated, too, for their manufactures; and by the extent of her commerce and conquests, Babylon became the great central point where all nations assembled. With this luxurious city the Phenicians traded; but the records of both nations having perished, it is only from a few imperfect notices of the Greek and Hebrew writers that our scanty knowledge of these people is derived. Had the case been otherwise, geography would not have been still in its infancy two thousand years after the fall of Babylon.†

Next to the Hebrew writings of the Old Testament, the oldest geographical records extant are the Iliad and the Odyssey of Homer, which are the sole depositories of the knowledge possessed by the Greeks of the state of the world prior to the age of the poet. In these primeval times, the earth appears to have been regarded as a flat circular disk, surrounded by the ocean stream. The extent of the known world was only from Colchis in the east, to somewhere about Sicily in the west; and the Mediterranean and the Euxine seas, communicating at either end with the ocean, stretched across it in that direction. Egypt seems to have been known, and the Ethiopians are also mentioned; but, towards the north, the information of Homer was bounded by Thrace. Hesiod, who lived sometime after Homer, knew of the Lygyes, who dwelt beyond the Tyrrhenians, and of the river Eridanus (Rhine), which flowed from the Riphean mountains northward to the ocean, of which river the Rhone and the Po came afterwards to be considered branches. He also mentions the amber which was collected at its mouth, and the singing swans that haunted its waters and those of the ocean. He also celebrates the fertile land of Umbria, where the flocks and the herds brought forth three times in each year, two, three, and four at a time, where hens laid thrice a-day, the fruits of the earth ripened thrice a-year, and the women bore two or three children at a birth! Greece itself formed the central region, and Delphi, the seat of the great oracle and temple of Phœbus-Apollo, was called the centre (ὀμφαλὸς) of the earth. The world, the universe, appears to have been considered a hollow globe, divided into two equal portions by the flat disk of the earth; and how very limited was this fancied universe we learn from Hesiod, who says that it would take nine days for an anvil to fall from heaven to earth, and an equal number to fall from earth to the bottom of Tartarus! The upper part of this globe was *Heaven*, the abode of the everlasting gods, and the interior of this upper hemisphere was enlightened by the sun, moon, and stars. The lower part of the globe was *Tartarus*, filled with eternal darkness, and having its still air unmoved by any wind. From such beginnings as these have geography and astronomy advanced together, till the uttermost ends of the earth have been explored, and the prying eye of man has dived into the

readers will find a summary of the reasons for believing America to have been not altogether
to the ancients, in a book from which they might hardly expect such information, viz. *Faber*
ifficulties of Infidelity.

† Heeren's Historical Researches.

depths of the universe, far beyond what was once supposed to be the solid firmament of heaven, studded with little twinkling stars. "Poor man, to think the earth was turning round!" has been imagined as a fitting speech of a monk to Galileo; but what would Homer and Hesiod, or any of their contemporaries, have said, had they been told that the earth is in reality a mighty globe, as large as their universe, and that the universe itself is an assemblage of worlds, where man can see no beginning and no end—a mass of light and life, as incomprehensible as the Being who has given it existence!

From the time of Homer to that of Herodotus, the Greeks spread themselves over several parts of the Mediterranean shores. About 600 years B. C., a colony of Phoceans from Ionia founded Marseilles; and between 500 and 430, other colonies, from various parts of Greece and Asia Minor, had established themselves in Sicily, Sardinia, Corsica, and even Spain; but the history of these events can only be gathered from short, vague, and imperfect narrations, scattered through a great number of authors. Herodotus is celebrated as the father of history; and may, with equal justice, be styled the father of descriptive geography. By birth a citizen of Halicarnassus, he travelled into the three quarters of the globe that were known in his time, and ended his career in southern Italy, where, probably, he also finished the admirable history in which he has introduced the geographical information he had taken so much trouble to procure. He describes the Indians as the people of Asia who are nearest the east, and the place of the rising sun; and the country beyond them as a perfect desert of sand. The last inhabited country towards the south was Arabia; and adjoining it on the S.W. was Ethiopia, the last of inhabited lands. He was acquainted with Lybia, as far as the Atlantes, but beyond them he knew of no place by name, only that there was a habitable country as far as the pillars of Hercules, and even beyond them. His knowledge of the west of Europe was equally imperfect. He had heard of the river Eridanus, from which the Greeks obtained their amber, and the Islands called Cassiterides, from which they got their tin; but he had endeavoured, he says, without success, to meet with some one who, from personal observation, could describe to him the sea that lay in that part of Europe. The Ister (Danube) he appears to have been well acquainted with; he also mentions some of the rivers that flow from Scythia into the Black Sea; and he knew that the Caspian was a sea by itself, unconnected with any other, a piece of information thrown away upon subsequent geographers, Strabo, Mela, and Pliny, who, five centuries later, still represent it as a bay of the northern ocean. We are not to conclude, however, that he had accurate notions of all the countries within these limits; for even of *Rome*, the destined mistress of the world, then commencing the fourth century of her existence, he does not mention the name!

For some time after the days of Herodotus, the Grecian knowledge of the world appears to have been nearly stationary. About 368 years B. C., Eudoxus of Cnidus, whose desire of studying astronomy induced him to visit Egypt, Asia, and Italy, who first attempted to explain the motions of the planets, and who is said to have discovered the inclination of the moon's orbit, and the backward motion of her nodes, is celebrated as having first applied geographical observations to astronomy; but he does not appear to have directed his researches or conjectures to the figure or the circumference of the earth, or the distances or relative situations of any places on its surface. Nearly about the time of the death of Eudoxus, Aristotle flourished. This great philosopher, collecting and combining into one system the discoveries and observations of all who had preceded him, rendered them less liable to be forgotten or misapplied. From the observations of travellers, that the stars seen in Greece were not visible in Cyprus or Egypt, he inferred the spherical form of the earth, the basis of geographical science. His knowledge, however, of the details of geography was not much advanced. He supposed the coasts of Spain to be not very distant from those of India; and he describes the habitable earth as a great oval island, surrounded by the ocean, terminated on the west by the river Tartessius, on the east by the Indus, on the northwest by Albion and Ierne (Britain and Ireland), of which, however, his knowledge was very imperfect. To the north and the south, the Riphean mountains and the deserts of Lybia appear still to have been his limits.

A little earlier than Aristotle, Hippocrates of Cos, the celebrated physician, who had travelled in Scythia, Thessaly, Colchis, Asia Minor, and perhaps Egypt, composed the most ancient work on physical geography that has come down to our times. In his treatise on "Airs, Waters, and Places," he divides the world into two parts, and always opposes Europe to Asia, including in the latter both Egypt and Lybia. He appears in the course of his journeys to have followed the plan and the route of Herodotus, but his system is still that of Homer, showing how little progress the

science had hitherto made. In the same age lived Pytheas of Marseilles, who is celebrated for his knowledge in astronomy, mathematics, philosophy, and geography, and for the ardour and perseverance that carried him forward in the path of maritime discovery; but the course of his voyages and the extent of his discoveries are not very clearly ascertained. Setting out from Marseilles, he coasted Spain, France, and the east side of Britain, from the northmost point of which he continued his voyage for six days to the reached a land called *Thulé*, 46,300 stadia from the equator; and, it being then the summer solstice, he saw the sun touching the northern point of the horizon, assuring at the same time, that the day and night were each of six months' continuance. The situation of this Thulé has been ever since a fertile subject of dispute among geographers. Strabo and Polybius utterly denied his veracity; but on some points he was certainly much better informed than themselves; and, perhaps, the discordances that exist in his narrative, and have made its truth be doubted, are more owing to the mistakes or wilful perversions of those who quoted it, and have handed it down to us, than to its original falsity.

We are now arrived at the age of the greatest practical geographer of antiquity, the most adventurous and persevering explorer of unknown seas and countries, and, indeed, in every respect the most illustrious personage that figures in ancient history — ALEXANDER the GREAT, who appears to have been actuated by a desire to be honoured as the patron of science, nearly as strong as his desire to be known to posterity as the conqueror of the world. He carried along with him, in his triumphant journey, geographers and surveyors, to measure exactly the marches of his army, and to make observations upon the countries through which they passed. The famous voyage of Nearchus from Nova, on the Hydaspes, to the head of the Persian Gulf, accompanied on land by Alexander himself, the projected voyage round Arabia, the survey of the west side of the Persian Gulf, the projected establishment of a direct commercial intercourse between India and Alexandria, and the foundation of this city, which gave a new turn and a wonderful impulse to commerce and navigation, are but a few of the benefits that geography received from Alexander, or would have received, had not his plans been frustrated by his sudden and early death.

The conquests of Alexander opened up to the knowledge of the Greeks the wide regions of the east. After his death, *Seleucus Nicator* penetrated to the Ganges; Patrocles, his admiral, sailed upon the Indian Ocean and the Caspian Sea; numerous other voyages and travels were made by different individuals in different directions; geographical knowledge concerning all parts of the world abounded at the court of Ptolemy Euergetes; and, with all these helps, *Eratosthenes* at length completed a system of geography, about two centuries B. C. The limits of the known world of the Alexandrian Librarian were probably *Tinat* or *Tenasserim*, to the east; but his positive knowledge terminated at the mouths of the Ganges. On the sources of the Nile, his information appeared to be as extensive as that possessed at the present day. On the west and the north, his knowledge was the same as that of Pytheas. For the western side of Africa, he followed Herodotus. His charts of the coasts of Arabia of India to the Ganges, of the islands Albion and Thule and of the course of the upper Nile, prove the great progress of the Grecian geography since the time of Herodotus.

This progress was not confined to the navigation of the Indian ocean, for commerce had already opened up a route across Central Asia, which penetrated by the north of Persia into the north of India, and reached Palibothra by descending the Ganges, whilst other caravans made the circuit of the mountains Imaus, or Belur, to reach Serica. We cannot but regret that the works of *Agatharchides* of Cnidus have not come down to us entire. He appears to have visited the Grecian establishments on the coasts of Ethiopia and Arabia; and if Diodorus borrowed from him the curious details concerning Meroe, probably *Hipparchus*, 140 years B. C., derived from his writings the idea of a great southern territory which joined eastern Africa with India. To this ornament of the Alexandrian School, we owe the foundation of a geography which was purely astronomical, and perhaps the primary idea of geographic projections; but at that time celestial observations were but few; and in supplying the gaps by hypotheses, Hipparchus added to these errors in the map of Eratosthenes which he wished to rectify. Half a century before him, the travels of Polybius, then detained as a hostage by the Romans, gave them additional information concerning their conquests. Being of a positive disposition, he denied the discoveries of Pytheas, because contradictions were involved in them. He refuted the error of those who believed the [illegible] zone was uninhabitable, whilst he too much restricted the limits of the

The subsequent conquests of the Romans in Macedonia, Syria, Numidia, Mauritania, Britain, and Gaul, very considerably extended the circle of

geographical knowledge, and confirmed the truth of what Polybius had rejected. Hibernia, or Ireland, was again recognised, after being denied by Pytheas, Eratosthenes, Polybius, and Hipparchus, although its existence had been proved many ages before by the Carthaginian mariners. With the assistance of these new documents, and from his individual observations, the astronomer *Possidonius* imagined he had rectified the system of Eratosthenes; but he only committed greater errors. He enclosed the habitable world in a very elongated ellipsis, pointed at its two extremities, the form of which he compared to a ring. He probably believed, according to the account of Eudoxus of Cyzicus, in the possibility of executing the circumnavigation of Africa, and rejected the idea of Hipparchus, who converted the Indian ocean into an inland sea.

Meanwhile Julius Cæsar had illustrated the geography of Gaul, and commenced the discovery of Germany, and the coasts of the British isles. In the Augustan age, Germanicus as a conqueror visited Dalmatia, Bosnia, Servia, and Bulgaria, which had never been well known to the Greeks; the Roman Eagle reached the banks of the Elbe, and the description of the Great Empire was terminated by *Agrippa*, whose chart, exposed under his portico, exhibited its immense extent.

At this epoch *Strabo* composed his geography, a vast fund of the knowledge of his predecessors, and of his personal observations. It is evident that he had carefully consulted Dicearcus, Polybius, Eratosthenes, Hipparchus, and Possidonius; and that he had borrowed from, and commented upon, a great number of other authors. His work comprehends, at the same time, a very minute description of Greece and Asia-Minor, in both of which he had travelled, and a rapid sketch concerning the other nations that were then known. An exact topographer, and a scrupulous and modest critic in the former part of his work—in the other, Strabo is often nothing more than a faithless compiler, and a partial and superficial judge. The limits of his positive knowledge were, to the north, *Ierne* or Ireland and the mouth of the Elbe, and he avows that what is beyond this river, and what to the north of the *Tanais* or the Don, is unknown to him; he refuses to give credence to the existence of the *Thulé* of Pytheas, because, as he alleges, the earth is not habitable 4000 stadia to the north of Britain. Towards the east, he believes that *Taprobana* and *Thinæ* are the extremities of the world. As to Africa, his knowledge does not extend beyond the eastern coast of *Noticornu*, now Bandel-Caus; and upon the western side to the river *Bambotum* (perhaps the river Non, as Polybius had stated.) These coasts, in the opinion of Strabo, trended the one towards the east, and the other toward the west, at the latitude of 12½ of our degrees. It is here that he placed to the west his *Ethiopes Ætherii;* to the east the *Regio-Cinnamomifera;* between these two countries he only leaves a small space, into which the voyager, repelled by a burning and destructive atmosphere, cannot enter. He adopted the opinion of the Alexandrian School, concerning the union of the Atlantic and the Indian oceans, at the south side of this Africa, which was cut short by a half; and this opinion, preserved in the west of Europe during the middle ages, as attested by the planisphere of *Sanuto*, and some other charts of the same epoch, unquestionably influenced the bold Portuguese navigators to attempt the route of the Cape of Good Hope.

Strabo had scarcely finished his description of the world, when it was rendered obsolete by the progress of discovery. The Roman armies, these terrible pioneers of geography, did not stop in their career. Speedily the fleets of the empire turned the promontory of Jutland, or the Cimbrick Chersonese, discovered the island of Scandia, and finally penetrated to the entrance of the Gulf of Finland. The *Ebudæ*, or Western Islands, and the Orkneys, were visited at the time of the expedition of the Emperor Claudius. Some years afterwards, the south of Albion was visited by Agricola; and his fleet, in making the circuit of Caledonia, observed the true Thulé, or the chief of the Shetland islands, which Pytheas seems to have confounded with Iceland, of which he had also heard. Yellow amber became the rage of the Roman fair, and immediately speculative adventurers traversed the interior of Germany, of which they previously knew only the frontiers and the coasts. Far from these ancient forests, and under milder skies, *Hippalus* discovered the character of the monsoons, and confiding in these winds, he ventured to shoot right across from Africa to India, and thus open up more prompt and ready communications. New light concerning Africa resulted from the expeditions of the Consul *Paulinus* into Sijilmessa, and of Cornelius Balbus against the Garamantes. The limits of the great desert were ascertained, and various *oases* cheered the eyes of the conquerors. All this knowledge, acquired since the time of Strabo, is found in the natural history of *Pliny*, who seems to have been ignorant of the geography of his predecessor, although conversant with that of many others, valuable fragments of which he has preserved.

From the writings of Pliny, we perceive that we have lost Agrippa's description of the Roman Empire, to which we have already referred; as also the commentaries of king *Juba* regarding Africa, the relation of *Statius Sebosus* concerning the Fortunate Islands, and the Memoirs upon India, by *Seneca*. Pliny has no fixed opinions concerning the extent and figure of the earth; he hesitates between Hipparchus and Eratosthenes. But ill informed of the length of the different stadia of the Greeks, Egyptians, and Babylonians, he counted them at the rate of 8 to the Roman mile; whence resulted innumerable errors, which his want of critical skill still more increased. But in the midst of all these, there were an immense number of invaluable truths collected together for the first time in his great work.

The geography of *Pomponius Mela*, who lived nearly at the same epoch, is neither more exact, nor better defined. Like Pliny, he compares nothing, but confounds old opinions with recent discoveries. He restored the system of Eratosthenes, and the doubt whether the Caspian communicated with the ocean. The course he assigns to the Oxus is correct: he knew that the Sarmatians had extended their possessions to the Baltic, and that Scandinavia was separated from the neighbouring islands: Herodotus was his guide respecting India and Scythia, or, in other words, his intelligence was not so advanced as that of many of his contemporaries. He followed, but as an unfaithful copyist, the Periplus of Hanno, the Carthaginian, for the coasts of Africa. He admitted the probability of the junction of the Nile and the Niger, but he rejected the hypothesis of the latter's subterranean course, so extravagantly described by the Roman naturalist. He places the source of his Niger or *Nuchul* in Ethiopia, and adds this important observation: "Whilst other rivers run to the ocean, this flows to the east, and the centre of the continent, where it is lost, without any one knowing where it ends." May it not be said that Mela anticipated, by eighteen centuries, the state of our knowledge of the Joliba?

It is probable it was in the first century of the Christian era that there appeared that Nautical and Commercial Itinerary, which is known under the title of *The Periplus of the Erythrean Sea*, and the abridged geography of Dionysius Periegetes, in the shape of a Greek poem. Another itinerary, by Isidorus of Charax, supplies many geographic details concerning the empire of the Parthians. Towards the close of the same century, the demands of luxury pushed commerce into the north of Asia, as far as *Serica*, concerning which, a merchant named Titianus afterwards published some imperfect details. By the new Roman expeditions, it was made to appear that Africa extended southwards much farther than was usually supposed. *Marinus of Tyre* compared the authors who had written before him, and composed a complete body of geography, in which the new charts which he constructed are discussed; but it is only through the extracts of Ptolemy that we are acquainted with his works.

At the commencement of the second century, the conquests of Trajan extended the limits of geography. Dacia and Mesopotamia became well known; and this is the period which gave birth to some of those celebrated itineraries which the masters of the world caused to be prepared for the guidance of the marches of their troops, and the private possession of which was esteemed as the crime of high treason. The *Itinerary* of the emperor Antoninus, which has been attributed without proof to Ethicus, appears to be a collection of the ancient and modern maps of roads. The *Itinerarium Hierosolymitanum* seems to have been a map of roads given to some imperial functionary; the fragment of it which we possess indicates, in the most minute detail, the route from Bourdeaux to Jerusalem. Finally, *The Table of Peutinger*, more considerable than the *two* former, and which, according to Mannert, goes as far back as the reign of the Emperor Severus, comprehends in its extraordinary tracks, not only the Roman empire, but the farthest limits of the then known world, more especially towards the east, where we see the country of the Seres, the mouths of the Ganges, the island of Ceylon, and even roads traced in the heart of India.

Finally, we arrive at the epoch when the geography of the ancients was attempted to be put upon a scientific basis, and in the hands of *Ptolemy* it rose to the height of a mathematical science. The work of this celebrated man is nothing more than a set of elementary and geometrical tables, on which the figure and extent of the earth, and the position of its various portions, are set down. The limits of the different countries are not marked, and the author but seldom gives any historical notice. His text appears to have been often corrupted by the negligence of copyists and editors; but even after giving them the credit of many and great errors, very many still remain which really belong to the geographer, and these seem to have arisen from the *measures* which he used, and which made him miscalculate his longitudes. Nevertheless, with all its faults, the work of Ptolemy raises itself like a brilliant light-house in the dark

night of time. He displays to us in detail countries which never saw the eagles of Rome, and which were not thought of for ten centuries afterwards, except on the faith of his descriptions.

After the publication of the work of Ptolemy, the inroads of the barbarians, both in the east and the west, originated some new opinions concerning the northern portions of Europe. The marches of Septimius Severus from the banks of the Euphrates and Tigris to the mountains of Caledonia, A. D. 209, furnished information concerning the east and the north. A portion of this additional knowledge escaped the injury of time, and is found preserved in the itineraries of which we have spoken, and in the histories of *Ammianus-Marcellinus* and *Procopius*. The former supplies us with intelligence concerning the nations of Germany and Sarmatia, for which we seek in vain in Tacitus, Pliny, or Ptolemy; and Procopius gives us information respecting the people round the Black Sea and the Caucasus, which is the more valuable from having been collected by himself on the spot. In the sixth century, the north of Europe was, as it were, enlarged, by Sweden and Norway being introduced to notice. And this was the last advance made in ancient geography before the world sunk into the darkness of the middle ages.

The irruption of the northern tribes into the Roman empire swept knowledge almost entirely from the face of the earth, and condemned it to sleep for centuries in monastic recesses. The ignorance that prevailed was deplorable, and few appear to have had any acquaintance with geography beyond their own immediate neighbourhood. It would be unjust, however, to deny the services which were rendered to geography by the clergy of the middle ages. A zeal for their religion conducted them, as pilgrims or as missionaries, into the most distant countries, and the accounts of their travels, and of the wonders they had seen, furnished matter for the pages of the monkish annalists. *Emon*, the Abbot of Werum, in his account of a crusade, presents us with the itinerary of these militants from the Low Countries to Jerusalem. *Saint Boniface* gives some information respecting the people placed to the east of the kingdom of the Franks and of the Slavones, to whom he went to preach by order of the Pope. With the assistance of the letters of this courageous apostle, King Alfred, in the ninth century, composed the first complete description of the Sclavonian country. The missionaries and the commandants of the neighbouring frontiers brought intelligence successively of the nations upon the Oder and the Vistula. We now observe the Poles for the first time, they are noticed in the writings of *Ditmar* of Mersebourg, under the name of Poleni. It was attempted to plant the vine among the Slavi, a people whom the missionaries had been unable to convert, and *Saint Otho* was entrusted with the task. The inhabitants of the isle of Rugen did not treat him like the strangers whom they had repelled from their coasts, but received him gladly. This missionary, who had never heard of the Baltic, was greatly astonished at the vast size of this sea. — *Anscaire*, a monk of Corbie, under Louis le Débonnaire, penetrated into the country of the dreaded Normans, and travelled over Sweden and Denmark, which were before that time but little known. The detailed journal of his labours and dangers is now lost: but two centuries afterwards, Adam of Bremen laid it under contribution, and by uniting its observations with those he obtained from Sveno, king of Denmark, he compiled a very complete description of the kingdoms of the north.

After the downfal of the Western Empire, the Greek cities of Italy still preserved their communications with Constantinople, and imported into their own country the rich products of the East. In the tenth century, the Venetians had opened a trade with Alexandria, in Egypt. The people of Amalfi and Pisa followed their example: and the intercourse thus renewed with the East was still farther increased by the crusading mania that hurried the European nations in shoals to the Holy Land. Venice, Genoa, and Pisa, furnished vessels to carry them by sea, and thus brought into their own coffers all the wealth of the age. The effect of the crusade on geographical science was most beneficial. It diffused among the nations of Europe a greater knowledge of each other, and likewise made them acquainted with the countries and the people of Western Asia. Egypt, however, became shut against Europeans, in consequence of their hostility; but as a compensation for this loss, the Venetians and the Genoese opened up and carried on a caravan trade with India and China, setting out from the shores of Syria and the Black Sea. The countries, however, traversed by these caravans, were in a great measure desert, inhabited only by wandering tribes, without cities or cultivated ground. These journeys were attended with both danger and fatigue, but very imperfect records of them are now remaining.

Constantinople having been taken by the Latins in the fourth crusade, and held for several years by a Latin sovereign, the Genoese assisted the Greeks to recover their

empire, which they effected in the year 1260. In reward of this service, the Genoese obtained from the Greek emperor exclusive commercial privileges; and the Venetians, driven from the trade of the Black Sea, concluded a treaty with the Sultan of Egypt, in consequence of which Alexandria became again the emporium of Indian commerce, and so continued to be till the Portuguese discovered the route to India by the Cape of Good Hope, and opened up a direct communication with the countries that produced the so-much-coveted spices and drugs of the Indies — a consummation which the Venetians, and their worthy ally the Sultan, did all in their power to prevent, by sending a powerful armament to India to crush the Portuguese; but which expedition was signally defeated, and Venice and Alexandria fell in consequence into rapid and hopeless decay.

During these turbulent ages, great commotions took place in Asia, and the Mongols and Tartars, under Zingis-Khan and his sons, overran almost every part of Asia, and even made their way into Europe. Great alarm was the consequence of these invasions, and several ambassadors were dispatched to the Tartar chiefs by the Pope, and other Princes of Europe, to endeavour to pacify them, and induce them to turn their conquests in some other direction. For this purpose, in consequence of a convocation of the clergy held at Lyons by Pope Innocent IV. in 1245, six monks were selected from the new and severe orders of Predicants and Minorites. John de Plano-Carpini and Benedict travelled through Bohemia and Poland to Kiow, and thence by the mouth of the Dnieper to the camp of Corensa, a Mongol general. Thence crossing the Don and the Volga, they came to the camp of Baatu-Khan, who sent them to the Emperor. The other ambassadors, Asceline, with Friars Alexander, Albert, and Simon de St. Quintin, went by the south of the Caspian through Syria, Persia, and Khorassan, to the court of Baiju-Nojan; but it is only of the travels of Carpini that any account remains.

In 1253, William de Rubruquis, or Van Ruysbroek, by order of St. Louis, king of France, commenced a journey in Tartary with a similar object. He passed through the Crimea, along the Volga and the shores of the Caspian sea, and arrived at length at the great camp of the Mongols, where he saw Chinese ambassadors; and from them, and certain documents, he learned many particulars respecting the north of China, the most curious of which is, his accurate description of the Chinese language and characters. He returned by the same route, and arrived at Tripoli, in Syria, 15th August 1255. He is the first who mentions koumiss and arrack; and he gives a very particular and correct account of the cattle of Tibet, and the wild and fleet asses of the plains of Asia. He moreover confirms the account given by Herodotus, so many ages before, of the separation of the Caspian from every other sea, a fact that had till now been overlooked or forgotten.

But the most distinguished traveller of those times was MARCO POLO. While the most powerful kingdoms in Europe were trembling at the proximity of the Tartars, the Venetians and the Genoese seem rather to have rejoiced at the prospect of finding new markets for their commerce among the new conquerors, and several of the merchants of both States began to try their fortunes at the courts of the Tartar princes. Two noble Venetians, Maffio and Nicolo Polo, were amongst the first to make the experiment. Having purchased a stock of jewels, they crossed the Black Sea in the year 1254, and found their way to the residence of the great Khan of the Tartars at Canbalu, the modern Pekin, the capital of China, where they were favourably received. Returning home as ambassadors to the Pope from the Great Khan, after an absence of fifteen years, Nicolo found that his wife had died, leaving a son named Marco, who was now approaching the age of manhood. Accompanied by this youth, the two brothers again set out from Venice, on a new journey into the East, in the year 1271; and after a long and wearisome travel, they arrived at Pekin, where the Khan received them with honour, took young Marco under his protection, and made him an officer of his household. Marco adopted the dress and customs of the country, and made himself master of the four principal languages then in use in the empire. By his talents and accomplishments he soon acquired a great degree of influence at court, was employed on missions to the most distant provinces, and even held, for the usual period of three years, the high rank of Governor of Yang-chou-fou, in the province of Kiang-nan. After a residence of seventeen years, the Polos felt a desire to revisit their fatherland; but the emperor being unwilling to let them go, they contrived to leave China by stratagem, and returned by the way of the Indian Ocean and the Persian Gulf, whence they journeyed through Trebisond and Constantinople, and reached Venice in the year 1295, after an absence of twenty-four years.

Having thus traversed so great a part of both the continent and the seas of Asia,

a person of the talents and accomplishments, and high official rank of Marco Polo, must have possessed the most ample information concerning those distant regions. He seems nevertheless to have taken no measures to make his geographical knowledge extensively known, and to prevent it perishing with his own life; for it was only during a long captivity as a prisoner of war at Genoa, that one of his companions in misfortune procured from him that account of his travels which has come down to our times. The three Polos were the first Europeans who are known to have visited China.

The recital of Marco Polo is generally the result of personal observation, though reports of others are sometimes so intermingled with the text, that it is often difficult to distinguish what belongs to the traveller, and what to his informer; hence considerable uncertainty pervades the account of his route, and of many places which he visited. But still his text remains a rich mine of information. He dilates on the industry of Bagdad, on Georgia, Tauris, and Persia, and was astonished at their silk manufactures. Of Badakhshan, remarkable for the extraordinary salubrity of its climate, he celebrates the flocks of wild sheep, the swift horses, and the mines of precious stones, which supplied the balass ruby, the lapis lazuli, and other minerals. Our naturalist observed, that on the mountains of Belur, where the atmosphere was highly rarified, fire burned with less vivacity and strength. He accurately described the animal which supplies the musk, and the great pheasant. His details upon Bokhara and China are those of a geographer. He traversed a great portion of the provinces of this vast empire; and although he does not describe them all, he gives us a rapid sketch of its most important towns, of Cambalu or Pekin, of Nankin, and of the town of Quinsai, the largest in the world, and whose countless inhabitants consumed 24 quintals of pepper a-day. He mentions the commerce of Canfu with the Indies and the Spice Islands. He says nothing of tea, but does not forget porcelain. He mentions also the cowrie of the Maldives. He is astonished at the scarcity of silver in China, and at its high price compared with that of gold. He also speaks of their paper money, and of the dearness of furs; and coal, or black-stone, as he calls it, does not escape his observation. He has also preserved some curious details of the North of Asia. He was informed that the soil of these northern countries was composed of morasses, which continued to be covered with snow and ice for the greater part of the year; that instead of chariots, the inhabitants employed small sledges, which were drawn by rein-deer; and finally, that the most precious furs were there found in abundance. By these traits we recognise Siberia.

Marco Polo is the first who gave any account of Bengal to Europeans; but whilst speaking of its fertility, of the beauty of its cottons, of its sugar, and crops of rice and indigo, he seems to confound it, as well as Pegu, with the provinces of Cathay. His narrative includes the towns on the western and eastern sides of India, but is silent concerning those in the interior — an omission which was probably intentional, for he treats largely concerning many things in these countries. He was not ignorant of the castes in India, nor of the aversion of the Hindoos to the sea, nor of the manner of travelling in palanquins, nor of the voluptuous dances of the courtesans, nor of the scarcity of horses in these countries. Japan he named Cipangu, according to the Chinese appellation Shibyn. He places 7400 islands in the sea of Cin. He also knew by report of Great Java (perhaps the island of Borneo), which abounded in spiceries, to purchase which, it was resorted to by the Chinese. His smaller Java, where he remained five months, is unquestionably the island of Sumatra, and concerning it he supplies very abundant information. His notice of the island of *Malaiur*, and of the town of the same name, proves that he had heard of the Malays, who had spread themselves as far as the other side of Molucca. His navigation in the Indian seas appears to have led him to Nicobar and Andaman, whose inhabitants he characterizes as man-eaters, and cruel towards strangers. He also mentions Ceylon, and the pearl fisheries. As to Madagascar, and the eastern coasts of Africa, he knew them only from the Arabian writers, and amuses himself by repeating many of their fabulous stories.

On the traces of this intrepid traveller, and of the missionaries who had preceded him, other Italian merchants followed, among whom Pegoletti (1345) particularly deserves to be named. His itinerary is curious as a commercial route, and indicates the course which the merchandise from Azoph followed on its transit into China. This line traverses the middle and eastern parts of Asia, Azoph, Astracan, Saracanco or Suratschick, in Tartary; Ourghenz, in Kharizm; Otrar, in the neighbourhood of Bokhara; Almalekh (Al Malik) in the Lesser Bukharia; Khami (Kan-Tcheou), near the great wall of China; and Cassai, perhaps Quinsay, now Hang-Tcheou-fou. The limit

of the travels of Pegoletti in the East, appears to have been Cambalu or Pekin, named *Gumalecco* in the itinerary. He describes his route in returning with equal minuteness, and it appears to have been the common one followed by the caravans of that time, when returning to the shores of the Mediterranean from India.

Religion, politics, and commerce, those three great stimuli to all great enterprises, continued, during the 14th and 15th centuries, to direct general attention to Central Asia. Among the travellers and geographers of the former part of this period, we shall only name Haïtho, Oderic of Portenau, and Mandeville, who have added few truths and many errors to the information accumulated by Marco Polo.

"*The Oriental History*" of Haïtho comprehends a general geography of the principal States of Asia, with the exception of the peninsula beyond the Ganges, and the neighbouring islands. Like Mandeville, he places a certain kingdom of *Tarse* between China and Turkistan. He gives the name of *Igours* to its inhabitants, among whom he recognised some professing Christianity, who made use of peculiar letters. His map of Turkistan, and his remarks on the manners of the Chinese, are alike distinguished by their fidelity. It is evident that he has put Rubruquis and the other travelling monks under contribution, and that he has availed himself of the writings of the Mongols.

Animated by an ardent zeal, and devoting himself to the labours of far distant missions, Oderic of Portenau proceeded towards Asia. Arriving at Constantinople, he crossed the Black Sea, landed at Trebisond, travelled to Ormus, and embarked at this port for the coast of Malabar, where he remained some time. The islands of Ceylon, Sumatra, Java, and Borneo, were successively visited by the indefatigable missionary. He landed upon the southern coast of China, and traversed that vast empire, from south to north, to reach Kambaleth (Pekin.) His route in returning was nearly that which Marco Polo had pursued in going; and it is equally difficult to follow him in this portion of his travels, which terminates in Thibet, and adds scarcely anything to the information previously acquired. Some new facts concerning the coast of Malabar, the culture of pepper, the ancient custom in India of women burning themselves along with the bodies of their dead husbands, and accounts of the religious practices of the Hindoos and the penances of their yogies, appear to be all that merits being extracted from his tedious narrative. One feature of his narrative is particularly remarkable: he affirms the truth of many of his recitals with the solemnity of an oath, and these portions are by no means the least difficult of belief. Sir John Mandeville, an English knight, traversed Asia at the same time as Oderic, and the agreement of their narratives leads us to suppose that they had copied from each other, or had derived their information from the same source. It was the fashion at that period to extol the wonders of the East; and Mandeville, wishing to become more intimately acquainted with them, left England in 1327, passed through France, and reached Palestine. Far from fighting like a good knight against the infidels, he entered the service of the Sultan of Egypt, and followed the Great Khan of Cathay in his wars against the king of *Manci* (southern China.) His itinerary is the same as that of Oderic; and he also draws from the geography of Haïtho, and transcribes largely from the old chronicles of the time. The contemporary monks have been accused of some of these additions, but probably Mandeville himself wished to improve upon the wonders of his predecessors. He finds his monsters in Pliny, and his miracles in the legend. In his work, we find islands inhabited by giants fifty feet high, and certain demons, who, from the tops of the mountains, vomited flames of fire upon the passing travellers; and also a certain lamb which was brought forth by a melon. He places his Prester John in the city of Susa, and the history he gives of him seems mixed with Indian traditions. In his travels there is very little real geography, with the exception of some new details concerning Egypt and Palestine.

Though the taste for that kind of fables continued to predominate throughout the 14th century, yet the narratives of the 15th century began to get rid of them. Ruy Gonzalez de Clavijo appeared at this time, as a truthful and well-informed traveller. Sent as ambassador to Tamerlane by Henry III. king of Castille, he embarked for Constantinople on the 21st March 1403; thence he crossed the Black Sea to Trebisond, and then by Armenia, the north of Persia, and Khorassan, to the city of Samarcand, near to which Tamerlane was encamped. He fully describes the fêtes which were given him by the conqueror, and this sketch may serve to convey an idea of the oriental history and industry of this period. In his work there are likewise very curious details of the commerce of the East. That of Samarcand was then flourishing, and the Russians and Tartars came to exchange their hides, furriery, and linens, with the silks, musk, precious stones, and rhubarb of Cathay. Tauris also, then rich and ener-

getic, received the same articles, and exchanged for them those products of Europe which were carried thither by the Genoese. Sultania also was still a considerable market, being the grand entrepôt between Persia and India. Clavijo is the first who makes us acquainted with this mode of commercial intercourse between India and Europe. He is also the first of the travellers of the middle age who rejects all prodigies from his narrative, and his work contains the only information we yet possess concerning some parts of Asia.

The work of Schildberger, a German, who followed Tamerlane in his conquests, is too vague and too incorrect to throw any light upon geography. More instruction may be found in the travels of Josaphat Barbaro, a noble Venetian, who was sent by the Republic to Tana, in the year 1436; and to Ussum-Cassam, king of Persia, in the year 1473. He traversed a great part of Tartary during his former absence, which lasted for sixteen years. After this he visited the principal towns of Persia, such as Shiraz, which then contained 200,000 inhabitants; Yezd, which was enriched by its silk manufactories; Strava, or Estrava (the Astrabad of our day), which was then bustling, commercial, and populous. His details concerning Russia are not devoid of interest. The duchy of this name was then without power, and far from populous, and Moscow inclosed vast spaces covered with woods. He exhibits Georgia devoid of its ancient civilization, and preserving no other trace of it than great corruption of manners. What he says of the tribes of the Caucasus, is unintelligible; and the names in this part of his narrative are too much altered to be at all useful.

Barbaro terminates this long succession of travellers, who, from the 13th to the end of the 15th century, traversed the interior of Asia; and it was by uniting their partial discoveries, and their different itineraries, that the geographers of those several epochs attempted to pourtray the whole of the earth. It was with the help of these incomplete materials that Martin Sanudo, Pietro Visconti, the brothers Pizigani, Giraldis, Pareto, Bianco, Bedrazio, Bonincasa, Martin Brazl, F. Mauro, the authors of the voyages of the brothers Zeni and of Marco Polo, and some other geographers whose names are unknown, designed those rude charts, in which we find combined both the recent discoveries and the opinions of the ancients, distorted by ignorance, and accommodated to the necessity of filling up vacuities, or supporting absurd hypotheses. In many of these charts, Europe, Asia, and Africa, are represented like a vast island. Africa is terminated to the north of the equator, and in this position is washed on the south by the sea, as Eratosthenes and Strabo had believed, and whose ideas were still maintained in Western Europe.

These charts of Sanudo and of Bianco represent the greatest number of European kingdoms, and trace the States of the north which are joined to Russia by a long and very narrow tongue of land. The figure of Southern Asia is quite shapeless, and the Tartars occupy the north of this portion of the globe. We find, in other charts of the epoch now under review, some vague indications of the discoveries which were made in the west of Europe and Africa, in the 11th, 12th, and 13th centuries. There is an island named *Antilia* placed to the west of the Canaries in several of these charts, and especially upon those of Bianco, Bedrazio, and Pareto. The learned Buache has endeavoured to prove that this *Antilia* was no other than one of the Azores; and he partly grounds his opinion on the fact, that there appears to be a great proximity in their situations. The charts of Bianco might give rise to this sentiment, which is, however, overturned by the inspection of Pareto's map, with which the French geographer was not acquainted. On this latter, *Antilia* is found at a very considerable distance from the ancient world, and quite to the west of the Atlantic Ocean; and it is even maintained by some well-informed men, that it was a knowledge of this *Antilia*, fabulous or true, reaching Columbus, which prompted him to his glorious enterprise.

There may be also seen in the maps of the 14th century, a delineation of the eastern coasts of Africa, before the discoveries of the Portuguese, which might lead us to suppose that these bold mariners, in doubling Cape Nun or Non, and advancing southwards, only navigated a sea which had been already visited. A map of 1346, which is written in Castillian, represents Cape Bojador as a known point, and that navigators had passed it. A manuscript, preserved at Genoa, contains the record of an expedition which sailed from Majorca about the same time, with the purpose of reaching the mouth of a river called *Vedumel* or *Rui Jaura*, probably Rio-do-Ouro. The Canary Islands appear on this map of 1346, probably taken from the descriptions of the Arabs; and even the island of Madeira appears upon another map, under the name of *Isola de Legname*, the Island of Forests, the true meaning of the name it now bears.

Europe was now fast awakening from her long intellectual slumber, and the early years of the 15th century witnessed the first of those systematic attempts that resulted in the discovery of the way to India by Da Gama, and of the New World by Columbus. The Moors and the Arabs held possession of great part of Spain for nearly seven centuries. They conquered it almost at once, but were driven out very slowly. As one province after another was recovered by the Christians, each successful leader established a new kingdom for himself. Among these were the kings of Portugal, who, not content with expelling the Moors from the Peninsula, followed them into Africa. In 1415, King John I., attended by his sons and principal nobility, made a descent upon Africa, took Ceuta, and at his return, appointed his fifth son, Don Henriquez Duke of Viseo, to be governor of the new conquest. Don Henry was an able and active-minded prince, well versed in all the learning of the age, and he appears to have very early contracted a passion for maritime discovery. While residing in Africa, he received much information from the Moors respecting the interior and the tribes beyond the desert, and justly concluding that these might be reached by sea, he resolved to overcome by perseverance the difficulties of the navigation.

So early as 1406, Don Henry had already taken up his residence at *Sagres*, near Cape St. Vincent, with the purpose of gratifying his passion for discovery. His regard for religion also led him to endeavour to destroy or diminish the power of the infidels, and his patriotism to acquire for Portugal that Indian commerce which had enriched the maritime states of Italy. Hitherto the farthest limit of navigation along the coast of Africa was Cape Nun, scarcely 300 miles from the Strait of Gibraltar. In 1412, the prince sent out his first vessel to explore the coast, and continued to send one every year, till at last his mariners succeeded in doubling Cape Nun, and making their way to Cape Bojador, the dangers of which were too formidable to allow them to pass. Accident, however, effected what the skill of his mariners had failed to perform. In 1418, one of his ships was driven out to sea by a storm, and after they had given themselves up for lost, the crew discovered an island, to which, in token of their fortunate escape, they gave the name of *Porto Santo*. The neighbouring island of Madeira was soon afterwards discovered; and the Portuguese, emboldened by this first success, made their way from point to point along the coast, till at length their perseverance was rewarded by the discovery of the Cape of Good Hope, round which lay the road to India. This was effected by Bartholomew Diaz, in 1486, twenty-three years after the death of the illustrious prince to whose enlightened zeal all these discoveries were owing. Diaz gave the cape the name of *Tormentoso*, on account of the terrible storms which he had encountered; but the King, Don John II., at his return, ordered it to be called by the better-omened name of *Cabo de Boā Esperāza*, Cape of Good Hope.

In 1496, Vasco-da-Gama, with a fleet, passed the cape, and arrived at Calicut on the coast of Malabar. Under the skilful and intrepid conduct of Albuquerque, Da-Castro, and Almeida, the Portuguese, within a few years, explored the farthest shores of Asia, and established their dominion along all the coasts of the Indian Ocean. By and by they were followed by the Dutch and the English, who wrested their empire from them; and now, out of their wide-spread possessions in Asia, the city and small territory of Goa in India, and the town of Macao in China, are all that remain to Portugal.

The glory of Columbus, who only completed what Don Henry had so well begun, and so perseveringly carried on, has eclipsed the fame of his master. The discovery of America occupies so prominent a place in the history of the world, that it seems to be regarded as an isolated event, to be entirely ascribed to the genius of the man who made it. So far, however, was this from being the case, that the way had been prepared for Columbus by the preliminary voyages of the Portuguese. Every thing was now ripening for this great event, and America seems to have been destined to remain no longer hid from the eastern world; for, only seven years after the first voyage of Columbus, the Portuguese Admiral, Pedro Alvarez Cabral, who commanded the second expedition to India, was driven by the wind so far out of his course as to reach the coast of Brazil, till then unknown.

No part of the history of geography is better known than that which narrates the voyages of Columbus. He sailed from Palos, a small sea-port of Andalusia, on the 3d of August 1492; in thirty-three days landed on Guanahani, one of the Bahamas; and, on his return, discovered the large islands of Cuba and Haiti. In his second voyage he discovered Jamaica; in the third Trinidad, and the continent of America, near the Oronoco; in the fourth and last, he explored a part of the shores of the Gulf of Mexico. In the meantime the discovery of America by other voyagers was rapidly

advancing. In 1499, Ojeda, a follower of Columbus, sailed for the New World, accompanied by a Florentine of the name of Amerigo Vespucci; and this gentleman having published an account of the voyage, and modestly called the country he had seen AMERICA, after himself, the world adopted the appellation, and thus Columbus was robbed of the honour of giving his name to the new continent.

Immediately preceding the important events we have so rapidly narrated, the geographical knowledge possessed by the nations of western Europe was very limited. In fact, the somewhat vague knowledge of the far East, communicated by Marco Polo and other travellers, were almost the only additions made to what had been handed down from the Greeks and the Romans. Iceland, indeed, was known, but no ship had yet sailed beyond Norway; and all the countries to the east of the Black Sea and the Baltic were still unexplored, although some of them might be known by name.* But all at once the face of the world was changed. In less than thirty years after the first voyage of Columbus, the farthest east and the farthest west had met; and for the first time since the flood of Noah, the earth was proved to be, what geometers had suspected, a *globe*, and not, as Homer and Hesiod and most barbarians have imagined, a disk.

The way once shown, ambitious spirits were soon attracted to the new career of maritime discovery; and so early as 1497, or thereabout, for the time is not precisely known, Giovanni Cabota, a Venetian in the service of England, or his son Sebastian, explored a large portion of the coast of North America, from Newfoundland to Virginia. The object of these voyages was still to find a western passage to India. With this view, Pinzon (one of the captains of Columbus's first voyage) crossed the equator, and explored the coast of South America as far as the Gulf of Paria. In 1500, Corte-Real, a Portuguese, sailed towards the coast that had been explored by Cabot, visited Newfoundland, entered the Gulf of St. Lawrence, coasted Labrador as far as Hudson's Straits, to which he gave the name of *Anian*,—a strait which the geographers of the 16th century supposed to be the passage to the great ocean, the search for which led to many expeditions which contributed to the progress of geography along the coasts of North America. But it was not at this epoch that they sought this passage only by the north-west. Many attempted it by the south. The coasts of South America were accordingly soon explored, and Juan Diaz de Solis perished in a voyage of this kind, after having discovered the Rio-de-la-Plata. In 1513, Vasco Nunes de Balboa, having descried the great Pacific Ocean from the top of a mountain on the Isthmus of Panama, proceeded to the coast, and, wading up to his middle in the sea, took possession of the wide expanse for the King of Spain.

The Portuguese, after their successful discovery of the East Indies, obtained from the Pope a grant of all the countries they might discover; and, after the third voyage of Columbus, the King of Spain applied for and obtained a grant of the same kind. But as it was necessary to draw a line between the two rival nations, the Pope fixed upon the meridian of 27½° west of Ferro; all the countries to the *east* of that line being to belong to Portugal, all to the *west* to Spain. The kings, however, of the two countries, for their mutual accommodation, fixed the line of demarcation 370 leagues west of the Cape Verd Islands; and, supposing the globe to be equally divided between the two favoured potentates, the Molucca Islands, which the Portuguese had already occupied, were clearly situate within the hemisphere belonging to Spain. The Portuguese would not give them up; and this dispute gave occasion to the first voyage round the world. Francis Magellan, a Portuguese gentleman, who had served in India under Albuquerque, and visited the Moluccas, proposed to the king of Spain to sail to those islands by a westerly course, and thus establish the Spanish right to the possession of them, even upon the principle acknowledged by the Portuguese. The King of Spain, Don Carlos I. (better known as the Emperor Charles V. of Germany, a personage who never allowed any scruples of honour or conscience to stand in the way of his interest), or perhaps his ministers (for the king himself was then only nineteen), agreed to the proposal of Magellan, who accordingly sailed from

* The honour of having been the first discoverers of America is also claimed by the Norsemen, and with some show of probability, though we have not mentioned the circumstance in our text, as, properly speaking, it forms no part of the history of geography. The histories of Snorro-Sturleson, Torfæus, and Arngrim, and the Icelandic Chronicles, have all preserved the memory of the discoveries of Lief, the son of Eric Rauda, and Biorn, the son of Herjolf, who, in the year 1001, sailing to the south-west of Greenland, fell in with a country, to which, from its producing wild grapes, they gave the name of *Winland dat Gode*, or Wineland the Good. A colony was soon afterwards formed, and a regular trade carried on for some time between Winland and Norway; but ere long the communication was dropped; the colonists appear to have become extinct, and the situation of the country cannot now be pointed out. Of the certainty of the discovery there can be no doubt; but as it led to nothing, and was itself forgotten for nearly five centuries, it can hardly be allowed to detract from the well-earned glory of Columbus.

Spain in the year 1519, with five ships. In the course of his voyage he discovered and sailed through the strait that still bears his name, and made his way across the Pacific Ocean to the Philippine Islands, where he perished in a skirmish with the natives. His companions continued their voyage to the Moluccas, where they found plenty of spices, and then returning home by the Cape of Good Hope, reached Seville after an absence of 1154 days.

Twenty-six years had elapsed since the first voyage of Columbus, when vague rumours of the grandeur and opulence of Mexico excited the cupidity of the Spaniards. Grijalva, having been charged to make some observations on Yucatan, had discovered, in 1518, part of the eastern coast of New Spain; and Cortez forthwith prepared to invade this great country. In three years he conquered it; and, fifteen years later, Peru was conquered by Pizarro. Cortez was possessed of eminent talents; his mind was open to generous feelings; with much zeal he sought for a passage to the north of America, similar to that which Magellan had discovered in the south. He did not succeed, but made the discovery of California, and of the Vermillion Sea.

The search for this supposed strait was prosecuted with ardour, and produced some real discoveries. Rodriguez Cabrillo, a Portuguese in the service of Spain, pushed as far north as the 44°, and designated a cape there Mendocino. Francisco Galli advanced to 47° 30′, and discovered part of the coast which by the English of the present day is named New Georgia and New Cornwall. The English themselves entered into the pursuit, and commenced with great success. In 1578, Drake, a most skilful mariner, passed through the Straits of Magellan, buffeted by the tempest, and advanced into the South Sea, where unknown lands presented themselves to his view. He discovered, under the name of the Islands of Elizabeth, the western part of the archipelago of Tierra del Fuego; perhaps he even reached the southern extremity of America, to which, at a later period, the Dutch navigators assigned a name. The winds ceasing to detain him in seas he had no desire to explore, he sailed to the north, and visited the coasts already seen by Galli and Cabrillo, and which he called New Albion. He then crossed the Pacific, discovered a few islands, and arrived at Portsmouth, after an absence of 1501 days.

Twenty years afterwards, these coasts, as far as Cape St. Sebastian (42°), were examined by Sebastian Viscayno, who discovered the harbour of Monterey; and one of the ships of his squadron, commanded by Flores, went as far as the 43°, where the mouth of a river or bay appeared: this was at a later period converted into a strait, which received the name of Martin d'Aguilar; but neither the strait, nor the river, nor the bay, were ever afterwards again discovered.

We have already spoken of the voyages of Cabot and of Corte Real. Other navigators followed them; and if their attempts were equally fruitless, they had yet the effect of enlarging the domains of geography. Ponce de Leon discovered Florida; Jean Denis and Cosmant extended the chart of Newfoundland; Thomas Aubert reclaimed the first savages of Canada; Verazzani, in the service of Francis I., navigated the coasts of the same country, reached the 50° of latitude, and returned without establishing a colony. Jacques Cartier was the first to explore the gulf of St. Lawrence; he ascended the river 360 leagues from its mouth, gave to the country the name of *Nouvelle France*, and made the circuit of Newfoundland.

It was now the year 1534, and the Strait of Anian had hitherto always escaped discovery. For several years, all attempts were interrupted; but the belief of its existence was strongly maintained by most navigators, and soon those of England renewed their research. In 1577, Frobisher, in seeking for this passage, again found the southern part of Greenland, which he called Westfrieseland, and passed through a strait situated in the 64° of latitude, formed by some islands in Hudson's Bay, a strait which has been erroneously placed in Greenland. His countrymen pursued the same course. Sir Humphry Gilbert reached the harbour of St. John (in Newfoundland), and examined the country which extends southwards. The unfortunate Raleigh visited a part of the coast of North America, to which he gave the name of *Virginia*, in honour of Queen Elizabeth. Other navigators of the same kingdom pushed far north of these latitudes. Among the most fortunate and intrepid of these was John Davis, who distinguished himself by continuing the labours of Frobisher on the west coast of Greenland, in 1585–1587. During his first voyage, he penetrated as far as 66° 40′, and discovered an arm of the sea, called from him, *Davis Straits*. During another voyage he advanced to Disco Island, and on the west coast discovered Cumberland Straits. The ice proved an impenetrable barrier between Iceland and East Greenland, and the most advanced point he reached seems to have been Sanderson's Hope. Twenty years later, Hudson, one of the most eminent mariners of modern

times, visited these frozen regions, and continued the investigations of his predecessors. During his first voyage he ascended to a higher latitude than had previously been attained on the western coast of Greenland; in 1609 he discovered the river in New York which bears his name; and, in the year following, the great internal sea, called from him *Hudson's Bay*, where he was abandoned by his crew, and left to perish in a boat. Thomas Button was sent for the purpose of relieving him; but the journal of this navigator has not been published, although it appears that he traversed a portion of Hudson's Bay, discovered the river Nelson, and made some important observations on the tides.

This sea was explored in the year 1615 by Bylot; and he returned the following year in search of the north-west passage. William Baffin accompanied him as pilot, and this voyage is one of the most remarkable which the history of geography presents. Bylot and Baffin penetrated beyond Davis Straits; they sailed along the coast northwards, and there discovered Horn Sound, Cape Dudley Diggs, Hakluyts Island, Sir Thomas Smith's Sound, Cary's Isles, and the Sounds of Alderman Jones and Sir James Lancaster. They advanced beyond the 74° of latitude, and their discoveries were doubted; but Captains Ross and Parry, two centuries afterwards, proved their accuracy. Those who immediately followed them executed nothing of much moment. This was true of Fox's expeditions: the voyage of the Dane, Jean Munk, disclosed a new gulf, which he named *Mare Christianeum*, and a coast, which he named New Denmark. These discoveries are to be found in Welcome Bay.

During this period (1608), Samuel Champlain founded the French colony of Canada; and sixty years afterwards the English Hudson's Bay Company was established.

A desire to discover a shorter route to the Indies had excited all the endeavours we have just been enumerating; and it was with the same hope and end that other attempts were made by the north-east of Europe. It was imagined, that through these high latitudes they would soon reach the Chinese seas, and thus abridge the distance to the Spice Islands. Connected with the execution of this bold idea, and the hazardous undertakings to which it led during the 16th and 17th centuries, we find the names of Willoughby and Chancellor, Stephen Burrows, and Arthur Pet, Charles Jackman, Barentz, Hemskerk, Cornelissen, Ysbrantz, Bennel, Jonas Poole, and others. If the icy barrier resisted the efforts of all these intrepid mariners, it could not prevent them from penetrating into the permanent abodes of winter. The White Sea, which had been visited by Ochthere in the eighth century, and afterwards forgotten, was discovered of new, and opened up a new commercial route between Archangel and England and Holland: the northern coasts of Nova Zembla were discovered and visited; the Strait of Vaygatz was explored; and Spitzbergen, the last known land of the north, appeared upon the maps of the Polar Sea.

We have already remarked that Cortez had attempted to discover a passage by its north-west coast; and it would appear that about the same time he had thoughts of exploring the great ocean; at least the second voyage of Grijalva, which was undertaken by his orders, seemed to have had this destination. The result is but inaccurately known. It has been thought that he discovered a portion of Papua, as it was supposed that Saavedra discovered New Guinea. The voyage of Magellan had demonstrated that it was possible to navigate from the coasts of America to the eastern shores of Asia. It was conceived that, in the west of this vast extent of sea, there existed rich islands of gold, and in the south a great continent, which was made to approximate the equator, more or less, according to the system of the geographer who represented it.

The expedition commanded by Mendana, and which sailed from Callao de Lima on the 10th January 1568, was less meant to verify these conjectures, than to reach the Moluccas by the shortest way. Mendana took his course directly across the great ocean, and calculated it at 1450 leagues; and the discovery of many islands rewarded his perseverance. In this group, which he placed between the 7° and 12° of southern latitude, the land or island of Guadalcanal, and the islands of St. Christoval and Isabella, were particularly distinguished. It was on this land that the first mass was sung which was heard in these islands of the southern ocean. This voyage, the most important of those undertaken by the Spaniards since the discovery of the New World, gave origin to the greatest number of those fables with which their historians entertained Europe for more than a century. They did not forget to identify these new islands with the golden islands, of whose existence they had satisfied themselves; they gave them the name of the Isles of Solomon; and their position was for a long time one of the most uncertain and obscure points in geography. De Brosses, Pingré, and

Dalrymple, have made this archipelago travel from Tierra del Espiritu Santo (Holy Ghost Land) to New Britain, with which the learned Englishman supposed it identical. It is now believed, owing principally to the labours of Buache and of Fleurieu, that the Isles of Solomon are no other than the land of Arsacides of Surville, or the New Georgia of Shortland, of which Admiral d'Entrecasteaux completed the survey. The object of the second voyage of Mendana was to establish a colony on these isles of Solomon; but the art of determining the latitude and longitude was at that time so much in its infancy, that the Spanish navigator could not find his own discovery. However, he made new ones. He had the honour of first naming the Marquesas de Mendoza; he visited the islands of St. Barnardo, which Byron, in 1767, called Danger Islands; he also discovered the island of Santa Cruz, which Carteret afterwards named *Egmont*, and which is the largest of those that form the group of Queen Charlotte's Islands.

It was in this last voyage that Quiros, the friend and companion of Mendana, confirmed the idea of the existence of a southern continent, which, we have seen, continued to be the vague belief of the geographers of the day. Neither Magellan nor Gallego had suspected a continent in this part of the world, nor had the search for it been the object of any particular expedition; but the discovery of Santa Cruz made Quiros believe that this unknown continent had at last been found. In two memoirs which he presented at the time to D. L. de Velasco, we find for the first time a scientific and learned discussion upon this great question, which did not cease to be agitated till the days of Cook, Surville, and Weddel. Geography was indebted to Quiros for the discovery of a great many islands, and after his days the Pacific no longer appeared to be an immense waste. Had he been encouraged and supported by a government solicitous for true glory, and less avaricious for gold, Quiros would have been the Columbus of the ocean. The greatest number of the discoveries of this able navigator have since been confirmed; his *Dezana* was rediscovered in the Onasbrugh of Wallis; his island of *Sagitaria* corresponds to the Otaheite of Bougainville and Wallis; his *Neustra Senora de la Luz*, to the *Pic de l'Etoile* of Bougainville; and his *Tierra Austral del Espiritu Santo* is the same as the New Hebrides of Cook.

To this voyage of Quiros we must attach that of Louis Vaez de Torres, one of the captains of his fleet. Having been separated from the admiral in a storm, on quitting *La Tierra Austral*, he skirted along the shores of an extensive region for the distance of 800 leagues, and then reached the Phillipines, where he gave an account of his discoveries. As in this navigation Torres could not for 800 leagues coast along any other place than the southern shores of New Guinea, it follows that he was the first to pass through the strait to which Cook, its second discoverer, gave the name of *Endeavour Strait*.

Such were the concluding efforts of Spain to increase our acquaintance with the world: Mendana, Quiros, and Torres, terminate the list of those intrepid navigators of the bright days of her power.

But before this, the patient Dutchman, indefatigable and brave, had sallied forth among the northern ice; he had spread his sails in the eastern seas, in the Indies, and in the Molucca Islands he had established numerous factories. The founding of these establishments manifests that it was less with the view of cultivating science, than that of promoting commerce, that he embarked in these pursuits. It was with the same view that he followed out the discoveries of the Spaniards in the great Pacific. With the intention of reaching the Moluccas without doubling the Cape of Good Hope, the celebrated voyage of Le Maire and Schouten round the world, in 1615, was undertaken. For the first time the southern extremity of America was passed, and *Cape Horn* (so called from the town of Horn, from which they had sailed), became, as it were, the fellow of the Cape of Good Hope. Statenland was discovered; and *Le Maire* had the honour of giving his name to the strait which separates this island from Tierra del Fuego. The quickest and safest route was thus discovered, and the voyages round the world have ever since lost their character of danger. The navigation of Le Maire in the Pacific brought a sea spotted with islets and rocks to light, which was named the Bad Sea (*Mer Mauvaise*), at no great distance from the dangerous islands of Bougainville. He also discovered, in the northern part of the same group, the islands *Sonder-Grondt* (without bottom — so called because they could find no soundings along its coast), *Waterland*, and *Vlieghen (Fly) Island*. His course then led him between the Friendly and the Navigators Islands, where four small islands still preserve the names which were then for the first time given them, viz. the Traitors, the island of Good Hope, the Cocos, and De Hoorn. It is to be regretted, that in changing the course which had hitherto been followed,

and turning their head northwards, the prudence of Schouten prevailed over the zeal of Le Maire; for had they continued in the same latitudes, the honour of finding again the lands of Quiros, and of reaching the eastern coast of New Holland, would have rewarded their perseverance.

The course of his countryman Tasman, in 1642, was much better chosen. This great navigator, who was instructed to ascertain the extent of that great southern continent, of which the Portuguese and several Dutchmen had already visited certain portions, fully justified, by his numerous discoveries, the confidence which was reposed in his talents. He enlarged the limits of geography, by examining the northern Van Diemen's Land as well as the southern; also Van Diemen's Island, and the western coast of New Zealand, which he named *Staten-landt;* he also surveyed the Friendly Islands, the Fidji Islands, and many others. He gave the name of New Holland to the north-west part of this great continent, which he had been the first to witness; and he commenced the examination of the east, north, north-west, and west coasts of this vast land. By his first voyage he dissipated the notion that those portions which Edel, Leeuwin, Carsten, Nuyts, and De Witt, had previously discovered, extended indefinitely to the south and east; and in his second, he determined the extent of the great gulf of Carpentaria.

The name of Van Diemen, which Tasman gave to several of his discoveries, was that of the governor of Batavia; and this statesman richly merited the honour. He was solicitous of extending the possessions and commerce of the Company who employed him, and geography reckons him as one of its protectors. It was he who, after the first return of Tasman, in 1643, directed Captains Vries and Schaep to proceed to the north of Japan, and in these boisterous seas to endeavour to make discoveries. Before this voyage, geographers represented the famous land of Jesso in a very extraordinary way: they made it a continent or very large island between Asia and America, and even joined it to what was then called Russian Tartary. Meanwhile the Chinese missionaries had furnished some details concerning the island Saghalien, and concerning the existence of a strait called *Tessoi*. Le-Pere-des-Anges had stated that the land opposite to the island Saghalien was called the land of Aino Moxori, and that it was separated from Japan; but doubts still existed concerning the junction of Jesso with Saghalien. We shall erelong find that La Perouse dispelled these doubts, and that Broughton pointed out the strait of Sangaar such as it is now known.

The discovery of some of the southern Kuriles also belonged to this expedition of Captain Vries.

Between this last voyage, and the first Spanish ones to the Caroline Islands, to which little attention was paid, forty-three years, quite barren of discoveries, passed away; and the 17th century appeared to be manifesting the same inaction, when Dampier, who united all the boldness of a buccaneer with the science of a geographer, appeared on the scene. We owe to this celebrated navigator our first knowledge of the Bashee islands, of which he has given a complete description. He discovered, in 1699, and 1700, Shark's bay, in New Holland, and surveyed the north-west part of this continent to the extent of three hundred leagues, which more lately has been examined by the French vessels Le Geographie and Le Naturaliste, and, more lately still, has been visited by Captain King. He was the first to penetrate the strait which separates New Britain from New Guinea, and which bears his name. He very much increased our acquaintance with this great island, and showed the extent of its northern coast; he also made some other minor discoveries in these seas, and upon the shores of New Ireland: he likewise reached Ceram by a course which till then was unknown. Such is a review of his labours.

During the 16th and 17th centuries the inhabitants of Western Europe were not the only people who were engaged in the search for undiscovered lands. The same adventurous disposition animated the inhabitants of the shores of the Frozen Sea. In 1636, Russian vessels descended the Lena, and coasted along the shores of this terrible northern ocean. The shores of the eastern ocean were thus reached, in 1629, by Dimitri Kopilaw; and, in 1646 and 1648, Bomyschlan and Deschnew went from the Kovima to the Anadyr, and doubled Cape Tchoukotskoi. These remarkable voyages were then but little known, and many a long year elapsed before these maritime discoveries of the Russians were turned to any account.

The ideas of the Greeks and Romans regarding the configuration of the earth had now disappeared, from the day in which Columbus discovered the New World, and Gama passed those limits which had arrested the genius of the ancients, and Magellan had succeeded in convincing the multitude that the earth was a globe. The necessity of abandoning the vague plan followed by the authors of the early planispheres was

then perceived, as well as the necessity of determining the position of places by finding their distance from the equator or from the first meridian; but many accurate observations were required before this plan could be executed.

The system of Ptolemy was too deeply rooted speedily to give way, and it was at first attempted to effect an accommodation between it and the newly discovered facts. The surveys of the pilots and hydrographers who accompanied the first navigators, were had recourse to, but without any great profit; because the required science was wanting, by which to take the benefit of these limited observations, and, taken detached, they appeared as errors in the general maps. The maps of Appian, Ribeiro, and Gemma Frisius, were the first which represented the newly-discovered hemisphere. Sebastian Munster collected in his atlas all the discoveries of his time, and received the name of Strabo from his contemporaries. Finally, Ortelius infused some order into the science. He was the first who separated the modern geography from the ancient: he did much for both, and displayed much erudition even in his cartography. The map of the world, which he placed at the commencement of his *Theatrum Orbis Terrarum*, exhibits a system very different from that of Ptolemy. Mercator, though less learned, yet being a better mathematician, employed with much decision the few facts which existed at his time; and he is the true founder of scientific geography. He placed it upon a solid foundation, and left it in the hands of Cluver, Riccioli, and Varenius. Thanks to these celebrated men, erudition, astronomy, and high physical science, now became the auxiliaries of geography: it was then seen what it would be, when, rich in facts, it left the path of vain conjectures. Sanson, Blaeu, and Buræus, followed with success the footsteps of their masters, and began to exercise much care in the details of geographical charts, the general appearance of which likewise was much improved. Statistics, too, a secondary branch of the science, the commencement of which we have seen in the middle ages, engaged the attention of Sansovino, Bativo, and Davity. Germany was not long before it manifested its superiority in this department. Conring, who prosecuted it with ardour, soon did more and better than had been done before him. The Elzevirean Republics, which are a specimen of the statistical labours of this age, prove that the limits of that branch were as uncertain as incomplete.

At the beginning of the 18th century, geography was indebted for its progress to a zeal independent of conquest, and free from all mercantile consideration. Noble and perilous enterprises were undertaken without any other object than the increase of the knowledge already acquired, and to convey to unknown nations the benefits of arts and industry; accurate criticism and minute examination, as well as advanced civilization, influenced research, and illuminated it with their lustre.

About the year 1722, the belief of southern continents, still in all its force, led to the voyage of Roggeween, who thought he had discovered one in Antartic New Britain, but which turned out to be nothing more than one of the Falkland Islands. He also imagined that the ice-fields which he encountered at the 62° south, were attached to a continent; a second error, which Debrosses subsequently adopted. Roggeween named it Easter Island, and it was supposed to be the land seen by Davis; this was the opinion of Cook and Dalrymple, though not that of Fleurieu. His navigation of the Mer Mauvaise brought to light a group of islands, which were a portion of the Palliser Islands of Cook, but which, at the time, only led to the not very important discovery of the islands of Bauman, Roggeween, Tienhoven, and Groningen, the very position of which is uncertain, but which Fleurieu placed between 8° and 15° south, and between the 158° and 160° west from the meridian of Paris.

The course of Roggeween was badly selected; he crossed that of Quiros, and nearly followed that of Schouten, than which he could not have done worse; although this reflection might be made against several of the navigators who followed him. It would seem, that in quitting a western course, and striking towards the north, they were anxious to avoid New Holland.

Nevertheless, the time in which great discoveries were to be made in the Pacific Ocean had now arrived. Lands without number were about successively to appear, like a vast archipelago between Asia and America. Byron, Wallis, and Carteret, succeeded one another in this career. The discovery of the Falkland Islands, and of several smaller ones, such as the Danger Islands, and that of Disappointment, are the results of the voyages of the first of these. The other two occupy a more important place in the annals of the science. Wallis again found, in the beautiful Otaheite, the Sagitaria of Quiros, and made us acquainted with the southern chain of the *Dangerous* Archipelago. Carteret touched at the island Santa Cruz of Mendana, approached the famous Isles of Solomon, and first passed through St. George's Channel

between the New Britain of Dampier, and the land which from that time received the name of *New Ireland*.

At the same time that these fortunate navigators were giving names to unknown lands, and opening new paths for the navies of Europe, Bougainville, who had passed the early part of his life in camps, and who devoted the rest to gaining distinction on the sea, sailed through the *Dangerous* Archipelago of Wallis, and landed upon the shores of that Taïti of which he fancied himself the original discoverer. This would have been an additional honour: but sufficient remains for his glory, and to procure for him the gratitude of his countrymen. He was the first Frenchman who, by circumnavigating the globe, enriched science with important discoveries. He made known, and for the first time named, the beautiful Navigator's Archipelago, the lands de la Louisiade, the north-west coast and the northern point of the Archipelago of Arsacides or Solomon; and refound in the great Cyclades a part of the Tierra Austral del Espiritu Santo of Quiros.

It is sufficiently absurd that the belief of an imaginary island, near to America, and rich in the precious metals, should have revived, at the interval of two centuries, and should have led to the expedition of Surville in 1769, as it gave birth to that of Mendana in 1569; and it is another caprice of fortune, that the same error should have conducted both navigators towards the same regions. The identity of the Archipelago of Solomon's Islands and that of the Arsacides, seems to be all but demonstrated. In 1769, Surville made the discovery of the greatest part of the line of coast on the south-east, east, and north-east, of those lands which Lieutenant Shortland discovered on the opposite coasts in 1788.

But the first navigator of the 18th century, Cook, whose name is universally popular, had already appeared in the Pacific. His labours were immense, and they possessed the highest scientific interest; whilst it is only just, at the same time, to add, that he did not make so many discoveries, in the accurate sense of the word, as improve and digest that which was already known.

His first voyage exhibited New Zealand in its true light and bearings. He proved it was composed of two islands, and he gave his name to the channel which divided them. He discovered a portion, and examined with care the greatest part of the eastern coast of New Holland, commencing at the northern point of the strait which divides it from the island of Van Diemen, which had not previously been perceived, and proceeding to the northern extremity of that long line of coast, which then received the name of New South Wales.

His second voyage, which was undertaken for the purpose of examining into the existence of a southern continent, nearly resolved a question which had been agitated for two centuries. It was by it proved that there was no land, of any extent, on this side of the 71° of southern latitude. In this memorable voyage he visited many parts of New Zealand, and of the Archipelago St. Esprit of Quiros; he also surveyed with care the Society and the Friendly Islands, and discovered New Caledonia on its eastern side.

His third expedition had also in view the determination of certain great geographical questions. The voyages of the Spaniards to the north of California, and of the English in Hudson's Bay, had still left the north-western parts of America in obscurity; and there was also a want of accurate information concerning those parts of Asia which approximate to the New World; and the possibility of entering the Pacific from Hudson's Bay, and the existence of a passage into it by the north of Asia, still remained undetermined. The Russians, whose labours during the 16th and 17th centuries we have recounted, had, in fact, endeavoured to resolve one part of the problem. During the earlier part of the 18th century, they had continued their expeditions on the northern coasts of Siberia, and then, in 1724, had perceived a great polar land; but both the charts of d'Isbrand Ides, of 1693, and those of Strahlenberg in 1736, gave a very imperfect representation of their discoveries.

Behring, in 1728, after having traced all the northern coasts of Kamtshatka, supplied the first notions concerning the separation of the two continents. His second voyage, in 1741, led him much too far to the south on the American coast, where he discovered the Cape St. Elias, and the same uncertainty remained concerning the extent of the sea which separated it from Asia. In fact, it was not determined whether the lands which were opposite to Kamtshatka, and of which a vague apprehension existed, formed a part of America, or were only intermediate islands between the two continents. Such was the state of the question in Europe, when Cook offered his services in resolving it. His navigation along the north-west coast, proceeding from 30° north of Cape Mendocino up to Behring Straits, was not so carefully conducted as

to decide that the American continent within these limits was not at all interrupted: but if he did not prove this fact, he very unhesitatingly conjectured it. In his progress into the middle of the straits, he did not lose sight of the American coast; and had not the ice arrested his progress in lat. 70° 44′, and prevented his pursuing his course northwards, he would have explored the Polar Sea, and determined the trend of the northern coast of the New World.

This last voyage of the great navigator augmented, in other points, the mass of geographic information. Cook undertook the examination of New Zealand, and of the Society and Friendly Islands; he also increased our knowledge of the peninsula of Alashka, and of the Aleutian Islands, first named in 1745 by Novozilzoff. He discovered the Sandwich Islands, and was remarkably delighted with his success in this last particular; he delights to dwell, in his journal, on the beauty of these islands, and the advantages which they promised to mariners; and of course did not foresee that he was actually writing an eulogium upon his tomb, and that he was doomed soon to perish under the blows of those who were now receiving him as a god. The whole world seemed to sympathize in his fate.

But far from repressing the zeal of mariners, this remarkable event only afresh rekindled it; and a desire to acquire renown in maritime discovery became the ambition of all the enlightened nations of Europe. Louis XVI. who was anxious for the well-being and the glory of his people, and whose acquaintance with geography was both extensive and profound, originated the expedition of La Pérouse, and himself traced out the plan. Some of its scientific results are known: but the fate of the French navigator and of his intrepid companions long remained like one of the mysteries of the dead; nor was it till lately ascertained what land saw their shipwreck, their agonies, and death.

The efforts of La Pérouse on the north-west coast of America, in 1786, added additional information to that which Ayala, la Bodega Quadra, and Captain Cook, had procured. This coast, from Mount St. Elias, in about 60°, was investigated by going southwards as far as Monterey, and a harbour, which had escaped the observation of Captain Cook, received the name of Port des Français; and many other parts, which had only imperfectly been looked at, were now examined with care. The second important part of the expedition of La Pérouse, in 1789, was the survey of the seas of Japan, which includes that of the islands of the same name, and of the eastern coasts of Tartary; and here he did much for the science, as all the doubts and uncertainties which had hitherto prevailed concerning this part of the globe were nearly entirely dissipated. The seas between Tartary and Japan were examined as far north as 51° 30′; and the separation of the island Saghalien from the coast of Tartary, by a channel which became straiter and less deep as it advanced to the north, was finally determined. The discovery of the Straits of Pérouse, to the south of Saghalien, accomplished the demonstration that Jesso was an island, being on the south separated from Japan by the Straits of Sangaar, which had long been known. By these researches also, the northern coast of Japan resumed its true position as to the latitude.

These seas were again explored by Krusenstern and Broughton; the latter of whom, in 1797, passed through the Straits of Sangaar, and laid down the coasts as they are known at the present time; he also ascended some leagues farther northward than La Pérouse, and supplied geographers with ample grounds of discussion, by maintaining that the alleged straits between Mantchouria and Saghalien had no existence, and that this land is a peninsula. Krusenstern did not come near this channel; but he visited that which is to the north of the mouth of the river Saghalien; he also carefully surveyed the south-east and northern coasts of the land which bears this name, and also the western coasts of Jesso island, which preceding navigators had not visited.

What remained unfulfilled of the instructions of La Pérouse was performed by d'Entrecasteaux, who surveyed the whole of the western coasts of New Caledonia and of the island of Bougainville; also the northern part of the Archipelago of Louisiade, and nearly 300 leagues of the south-west coast of New Holland; that is to say, the whole of the land of Leeuwin, and nearly the whole of that of Nuitz. He likewise discovered, to the south of Diemen's Land, a number of channels, roads, and harbours. He determined the identity of the islands of Solomon or of Mendana with the land seen by Surville and Lieutenant Shortland.

Whilst he was performing this voyage, commerce, by its useful toil, was doing much in advancing geography. From 1785 to 1792, amongst the English, Hanna, Lawrie, and Guise, Meares and Tipping, Portlock and Dixon, Barklay, Colnett and Duncan, Grey, an American, and E. Marchand, a Frenchman, attracted to the north-west coast of America by the fur trade, made some discoveries there. Marchand also supplied

some additional information concerning the group of the Marquesas, and carefully examined the Sandwich Islands and the Mariannes. During the same period, Billings and Saritcheff, in the service of Russia, Bustamante, Galiano, Martinez, and Haro, in the service of Spain, also visited the same American coasts as far as the 60° north. Malespina surveyed some parts between 57° 1′, and 59° 94′, and determined many positions in the neighbourhood of Nootka Sound. This separate and piecemeal information, however, did not determine the question of the continuity of the continent, which was thus reserved for the persevering zeal of Vancouver.

This able mariner, the companion of Cook in his second and third voyages, examined with the greatest care the whole of the north-west coast of America, from California to Cook's Inlet. He discovered, that to the north of the 49°, the whole coast is skirted by innumerable islands, and that the inlet of Jean de Fuca only terminated in a strait which led back to the ocean. In passing the island of Quadra and Vancouver, he observed that to the south of Monterey the country presented a double chain of mountains, of which that nearest to the sea is the lower. He examined with minute care the Archipelago of King George, and that of the Prince of Wales, the Admiralty Islands, &c. This voyage, in which the Spaniard Quadra took a part, demonstrated that the idea of a north-west passage was a chimera; and that no communication fit for the transport of vessels existed between the Pacific and the interior of the continent, nor were there any practicable channels between this sea and the Atlantic. But the negative solution of this question was not the only result of these expeditions: the exploring of New Holland along a line nearly as extended as that surveyed by Entrecasteaux, the discovery of King George's Sound — of the island of Oparo, whose inhabitants resembled those of the Friendly Islands — and the accurate survey of the Sandwich Islands, were labours which would have been sufficient to signalize a less distinguished navigator than Vancouver.

The voyage of Kotzebue, in one of its most important results, connected itself with this last expedition. This able officer of the Russian marine took the *Rurik* through Behring's Straits, and found, to the east, in latitude 67°, a bay which extended southwards to 66°. To him also we are indebted for the discovery of Radak Islands, which form the north-east extremity of the Mulgraves, a chain which connects the Carolines with southern Polynesia, and which till then had only been noticed in passing.

But leaving the coasts which were thus made known and determined, the zeal of navigators led them to make original investigations, and we are now to trace the progress of geography on the shores of New Holland. Bass and Flinders made their appearance there about the close of the 18th century. Furneaux, the companion of Cook, had without doubt seen the large strait which separates Van Diemen's island from the main land. Bass observed it alone in 1798. Flinders and he united their exertions to make an accurate survey of the channel, and of the coast of Van Diemen's Land. Flinders explored the bays of Hervey and Glasshouse, and, in the years 1801, 1802, and 1803, the southern coasts of New Holland, the Straits of Torres, and the Gulf of Carpentaria, and thus proved himself one of the best sailors and most distinguished hydrographers of his day.

Whilst Flinders was executing with so much success and ability the operations he had undertaken, *Le Geographie* and *Le Naturalist*, commanded by Bandin, and with whom were Freycinet and Peron, were sailing in the same seas, and meriting praise by observations not less difficult, nor less ably conducted. It is especially on the west and north-west coasts of New Holland that we must look for the principal results of the French expedition, which, besides, enriched every branch of natural history with almost an inconceivable number of specimens in the three kingdoms of nature. To it, also, geography is indebted for accurate statements with regard to Timor, and some other neighbouring islands.

It was reserved for Captain King to do for New Holland what Vancouver had done for the north-west coast of America; and during four years, from 1818 to 1822, he prosecuted his painful and laborious investigations. He has pointed out a sure and easy course in Torres Straits, and determined a line of coast, 690 miles long, between Cape Hillsborough and Cape York. The geography of the north coast, and of a portion of the north-west, has been completed from the Wessel, beyond Cape Villaret, as far as George the Fourth's Harbour. He also pointed out a long succession of archipelagoes, running along at no great distance from the continent; and his observations on the tides in this neighbourhood have led him to conjecture, that in this line of 510 miles behind these archipelagoes, and thus almost unknown, great inlets of the sea must one day be discovered.

With the voyage of Captain King, above alluded to, is connected the increase of our geographic knowledge concerning the Mariannes, Timor, Ceram, the Moluccas, and the Caroline islands. Many of the islands of this archipelago, not indicated on the chart, were visited by *L'Uranie*. A new island, surrounded by dangerous reefs, was discovered to the east of Tonga, and a great number of positions were rectified, and, amongst others, those of Danger Islands, Pylstart, and Howe.

The expedition of Captain Duperrey, during 1822–1825, connected itself with the preceding voyage, of which, in some degree, it was a continuation. The results obtained on this occasion were not of less scientific importance. If La Coquille, like L'Uranie, made no brilliant discoveries — the happy lot of the mariners of the 18th century — it was only because the possibility of encountering new lands necessarily diminished every day. The great features of the whole globe are now known, and details alone remain as objects of pursuit: we are in the age of perfecting knowledge hastily acquired; and it is by the excellence of our instruments, and our methods of observation, that the navigators of the 19th century must acquire their celebrity.

The expedition of La Coquille has at the same time enriched our charts with the addition of some new discoveries. The Islands of Duperrey, the Isle d'Urville, in the neighbourhood of the MacAskill islands, and the island of Clermont-Tonnerre, at the western extremity of the Dangerous Archipelago, were all named for the first time. This vessel also revisited a great many places in different parts of the globe, and rectified many errors which existed concerning them. As among the more important, we shall mention its visit to the Serles Islands, and the Dangerous Archipelago; to Ine, Vayag, Syang, and Waigieou in the Papuan Archipelago; to Joyi and Guebe, in the Molueca Archipelago; to Dog, Volcano, Weter, Babi, Cambi, Ombai, and Penter, belonging to the Timorian Islands; and to Borabora, and some other points of the Society Islands. During this expedition, the geography of the Carolines was also reviewed with care. The island called Strong, or Oualon, first seen by the American Captain Crozer, was resorted to for the first time by a European vessel; and St. George's Channel, between New Ireland and New Britain, as well as the north-east port of New Zealand, were examined and ascertained with precision. Such is a dry enumeration of some of the principal results of the voyage of Captain Duperrey.

Whilst the two French navigators were ploughing the seas, and examining the islands of Western Asia, Mr. George Smith, the captain of an English merchant vessel, penetrated as far as the 62° 30′ south, and discovered, under west longitude 62°, a group of islands which he designated South Shetland. They were without inhabitants, and almost without vegetation, and might almost be regarded as the last southern limits of animated nature. But the point which Captain Smith had reached was very soon surpassed by Captain Weddel, who had formerly frequented the southern seas. After visiting South Shetland, he discovered to the east of them the South Orkneys; and then navigated, amidst icy islands, as far south as 74° 15′, under longitude 35° 20′ west, into an open sea, where he observed many whales, and countless numbers of sea-fowls. Other islands have since been discovered by Captain Biscoe.

In recounting the labours of a period which puts no limits to its investigations, our transitions must be rapid, like the march of science — and sudden, as we desire to embrace everything. We must transport ourselves, therefore, from the Southern Ocean to the Polar Seas, where the most courageous endeavours succeeded each other. By naming Behring, formerly mentioned, Morovief, Offzin, Roskelef, Feodor Menin, Prontschistschef, and Schalauroff, we point out the active part taken by Russia during a portion of the 18th century, in exploring the north and north-eastern coasts of Siberia and the islands in its neighbourhood. The exertions of these different mariners embrace a period of forty years, from 1728 to 1770. It ought to be observed, that of all the endeavours made by those we have just mentioned to double Cape Tchoukotskoi, not one of them succeeded: in fact, it had not been done since 1648, during the voyage of the Cossack Deschneff. Nevertheless, these repeated efforts had this important result, that they rectified many serious errors concerning the line of the coast of Siberia; and a great many points intermediate between the Straits of Waygatz and Cape Schelatskoi were better determined by these perilous and difficult navigations.

Is it certain, then, that the inhabitants of western Europe could not reach Behring's Straits but by the Pacific, rounding Cape Horn? and is the passage so much sought by Corté de Réal, Hudson, and Baffin, undiscoverable? Were the discoveries of these last imaginary? Where did those of Hudson stop to the north and west? Was it with propriety that some geographers defaced from their maps the coasts of that sea of which

Baffin had detected the limits? What really are the western coasts of Greenland? are they prolonged indefinitely towards the pole, or, trending to the west, may they then be traced? Such were some of the principal questions which were canvassed by the maritime nations of Europe since the early years of the 18th century.

In endeavouring to resolve them, Knight, Barlow, and Vaughan, between 1719 and 1722, did actually nothing. Middleton, in 1741-2, advanced into north latitude 66° 14′ by 86° 28′ west longitude, but still was not more successful. However, he made us more familiar with the northern ports of Hudson's Bay, and especially with that deep creek between Cape Dobbs and Cape Hope. The examination of the same localities by Captains Moore and Smith, in 1746, is the only result of their voyage which might have become useful to science, if, directing their course more to the north, they had reached the icy Straits of Middleton, since recognised as the Repulse Bay of our charts. With these attempts, those of Hearne and Mackenzie must be united, whose travels, though undertaken by land, had truly a maritime object in view. These courageous travellers reached two points in latitude 69°, upon the hyperborean shores of America; but what immense intermediate spaces between the Icy Cape of Cook, Mackenzie's River, Hearne's, and the last determined points of Repulse Bay?

If we were writing a dry catalogue, other names would require to be introduced; but we must here pass over in silence those attempts which yielded no results: we must limit ourselves to the statement, that the voyages of Captain Phipps, and of the Davies, Lowenorn, Egède, and Rothé, have established the fact, that an impenetrable wall of ice flanks the eastern coasts of Greenland, and that a never-ending winter prohibits all approach to it.

It might have been thought that so many vain attempts would have banished the north-west passage into the number of hopeless speculations. But this was far from being the case in England, where it continued to have many partisans amongst geographers, as well as among practical mariners. The British Government yielded to the suggestions of these two classes, and fitted out the first expedition of Captains Ross and Parry; and the recognition of the shores of Baffin's Bay, such as that great mariner had described them, were the result. Ross penetrated into Lancaster Sound, but did not advance ten leagues ere he imagined he saw land to the west which debarred his further progress. He then turned; but his opinion found dissentients in the expedition, and did not afford satisfaction in England. Parry, accordingly, was again fitted out to ascertain whether Ross or public opinion were right. He entered this unexplored Sound of Lancaster, which he speedily found to be a strait running directly west. He entered into this prolongation of the former, calling it Barrow's Straits, and discovered Prince Regent's Inlet on the south, and traversed it as far as 72°, when he returned to the north, and sailed in a polar sea, where the islands of Cornwallis, Bathurst, Melville, and some others, successively presented themselves to view. The ice finally stopped him at 116° west longitude, and forced him to return. Thus, although the object was not yet attained, still the geography of these high latitudes underwent a complete change. The whole of the region to the north of Lancaster's Sound, and to the south as far as Labrador, was found to be intersected with innumerable channels and islands, and Greenland was proved to be detached from the continent of America.

Parry quitted England a third time in 1821. He reached Hudson's Bay, penetrated into the icy straits of Middleton, and into Repulse Bay. He for the first time entered Lyon's Inlet, a narrow arm of the sea which ran into the continent, and terminated in Ross's Bay. Winter arrested his progress for eight months in the harbour of Winter Island; after which he quitted it to proceed further north. He doubled the point of Melville's Peninsula, and went through the Strait of the Hecla and Fury, in the 70° degree north, and so reached the Polar Sea. He did not go farther west than the 85° in this voyage, the principal results of which were an accurate retracing of the former discoveries of Bylot, Baffin, Middleton, and Fox, the discovery of the north-east portion of Melville Peninsula, and of the Hecla and Fury Straits. The impossibility of clearing the strait, on account of the western currents, which bring along with them enormous masses of ice, proved, that if the north-west passage be not an absolute impossibility, yet it is wholly useless for all the practical purposes of navigation, whether attempted along the northern shores of America — by passing between Melville Peninsula and Cockburn's Island — or by attempting Regent's Inlet — or, finally, by any other existing courses to the west and south of Melville Island.

The fourth voyage of Parry had for its object to reach the north pole over the ice; but natural obstacles prevailed over the most ardent zeal for discovery, and he accomplished nothing.

Captain Franklin was dispatched to America in 1819, to second on land the efforts of Parry, and chose for the centre of his operations the points which were determined by Hearne. He then descended the Coppermine River, entered the Polar Sea, and proceeded eastward as far as George the Fourth's Coronation Gulf, at nearly the same latitude as Repulse Bay, and which seemed to extend to the south-east, as if to connect itself with Chesterfield's Inlet. His second expedition, in 1825, had a double object in view. On reaching Mackenzie River, half of his party, under the command of Richardson, were to examine the coast intermediate between this river and the Copper-mine; and the other half, under his own command, were to examine the coasts between Mackenzie's River and the Icy Cape of Captain Cook. Complete success attended the former branch of this expedition; and Franklin himself was just on the point of reaching the last place visited by Cook, when the peremptory character of his instructions compelled him to stop about 10° east of the Icy Cape.

While Franklin and Richardson were exploring the coasts of America by land, Captain Beechy, in the ship Blossom, was employed to co-operate with them by sea; and, in the summer of 1826, he explored the north-west coast from Kotzebue Sound to Elson's Bay, 126 miles north-east of Icy Cape, and only 146 from Franklin's westmost point. He likewise surveyed, in his progress to and from Behring's Straits, many of the islands and coasts of the Pacific Ocean.

Captain Ross, stimulated perhaps by Parry's success, and wishing to retrieve the credit he had lost by his unlucky mistake respecting the termination of Lancaster Sound, succeeded, by the aid of a private friend, in fitting out a small expedition for discovery, with which he left England in May 1829. He was no more heard of till the autumn of 1833, when his party made their escape from the ice that had detained them so long, and reached in safety the very ship, the Isabella, with which he had explored Baffin's Bay in 1818, now employed as a whaler, and which had been searching for him in Prince Regent's Inlet. The extent of his new discoveries was not great. Besides reaching the magnetic pole, he surveyed the eastern and part of the western coasts of a land to which he gave the name of Boothia-Felix, in honour of Mr. afterwards Sir Felix Booth, to whose assistance the expedition was chiefly owing.

Public feeling in Britain having been strongly excited to ascertain the fate of Ross and his crew, an expedition was fitted out by private subscription, and put under the charge of Captain Back, who left England in February 1833, with instructions to search for Ross in the first place, and afterwards to explore so much of the neighbouring seas and countries as his time and opportunities would permit. The results were, "the determination of the physical aspect of the country north-east of Great Slave Lake, and the contribution of some additional facts regarding its coast line."

While these expeditions were in progress in the northern parts of America, geographical science was rapidly advancing in other parts of the world. The officers of the British navy, let loose from the toils of war by the long-continued peace, have been more usefully employed in surveying the seas and coasts of almost every accessible country; and by the zeal and intrepidity of private adventurers, as well as of public officers, large accessions have been made to our knowledge of the interior regions of both Africa and Asia. We should now take notice, in due order, of the journeys of those travellers, who, during the last four centuries, have contributed so materially to the progress of our acquaintance with the various countries of the earth; but our limited space would allow us to give nothing more than a useless list of names; and, besides, many of these will necessarily be mentioned, and perhaps more appropriately, in our descriptions of the countries that have been illustrated by their labours. We shall therefore conclude our sketch with a brief account of the more distinguished of those dauntless spirits who ventured, and many of whom sacrificed their lives in a series of expeditions more dangerous still than the northern voyages, and, for a long time, with as little prospect of a successful result.

Africa, though lying so near Europe, and apparently so easily accessible from the shores of the Mediterranean sea and the ocean, has ever been the reproach of European geography. The Roman conquests included all the regions of Barbary between the sea and the desert, and even of the interior their travellers seem to have acquired some knowledge; for Ptolemy, the geographer, describes a number of great rivers, lakes, and mountains, westward from the Nile, which have been generally understood to have been in the modern Negroland. Afterwards, at an early period of the middle ages, the Arabs, hurried on by the spirit of enterprise as well as of fanaticism, penetrated across the desert, and explored, subjected, and colonized, a large tract of the central regions. Several descriptions of these kingdoms are extant in the Arabic

language, but which, being till lately unknown in Europe, contributed nothing, directly at least, to the progress of geography. Early, however, in the 16th century, Hasan-Ibn-Mohammed-al-Gharnati, better known by his Christian name of John Leo Africanus, a converted Mahometan, at the request or command of his patron, Pope Leo X., wrote, in Arabic, a description of Africa, which was immediately translated into Italian, and published by Ramusio in his great collection; and having been soon translated from the Italian into French and other European languages, spread the knowledge of these countries among the learned of Europe. In the same century, the Portuguese, after having explored the coasts of Africa, penetrated into Abyssinia, and for some time maintained a communication with that country; but for two centuries later, no further progress was made by Europeans in exploring the interior.

In 1769, JAMES BRUCE, of Kinnaird, a Scottish gentleman of high lineage, and corresponding stature, after having been British consul at Algiers, and travelled through Barbary and Syria, conceived the design of penetrating into Abyssinia, and visiting the sources of the Nile. Accordingly, in November of that year, he entered the country, and in the November following (1770) he reached the springs of the Bahar-el-Azreek, or eastern Nile, to the south-west of Gondar, but had the mortification to learn, on his return to Europe, that he had been anticipated in his discovery by Payz, a Portuguese missionary, who had visited the same place in 1618. His account of his travels was, moreover, attacked on all hands by envious cavillers, and, upon their authority, discredited by people who could not judge for themselves. His reputation, like that of his great brother travellers, Marco Polo and the Father of History, who was considered for many ages to be little better than the Father of Lies, suffered severely; but every day, of late years, has been bringing to light new proofs of his veracity; and his claim to be considered as one of the most distinguished of modern travellers will now hardly be disputed.

In 1793, Mr. W. G. Browne, an English gentleman, an enthusiastic traveller, penetrated into Dar-Fur, a country to the west of Abyssinia, and procured the first distinct accounts of the origin and early course of the great western branch of the Nile, the Bahar-el-Abiad. Though he returned in safety from this daring enterprise, he afterwards perished in his vocation, having been murdered while on a journey in Persia in 1813.

In 1788, an association was formed in London to *promote the discovery of the inland parts of Africa*. Their first missionary was John Ledyard, an American, who had been round the world with Cook as a private marine, and had afterwards travelled on foot to the extremity of Siberia. The love of travelling seems to have been with him a disease: when Sir Joseph Banks first communicated the views of the association, he engaged in their service at once, and offered to start "to-morrow morning." He proceeded forthwith to Cairo, where he remained some time to qualify himself for his perilous enterprise. By conversing familiarly with the caravan merchants, he gained and transmitted to his employers a great deal of new information concerning the interior, but was carried off by a bilious fever before he could begin his journey. Their next missionary was Lucas, in 1789, who failed in an attempt to cross the desert from Tripoli, but acquired considerable information respecting the countries he had intended to visit. In 1791, Major Houghton, also employed by the association, attempted to explore Africa from the Gambia, but perished, or was murdered near Jarra, on the borders of Ludamar and Kaarta. In 1794, Foota-Jallo, near the west coast, was explored by Messrs. Watt and Winterbottom, two gentlemen in the service of the Sierra-Leone Company.

The next, and the most distinguished, missionary of the association, was MUNGO PARK, a native of Selkirkshire, in Scotland, and a surgeon by profession. In December 1795, he left the British settlement on the Gambia; and on the 21st of the following July reached the banks of the Niger — the grand object of his journey — "glittering in the morning sun, as broad as the Thames at Westminster, and flowing slowly to the eastward." He afterwards proceeded down the river to Silla, a large town on its south bank, 18° east of Cape Verd, on the same parallel; but there finding himself exhausted with sickness, hunger, and fatigue, half naked, and without any article of value to procure provisions, clothes, or lodging, and the fanaticism of the Moors, and the tropical rains, presenting insuperable obstacles to his farther progress, he determined to return to the coast; and accordingly reached the Gambia, after an absence of eighteen months — a successful result, to which the benevolent attention of a slave-dealer, named Karfa Taura, was mainly instrumental.

In September 1799, Frederick Horneman, a German, who had been educated at Gottingen, and offered his services to the association, left Cairo, under their patron-

age, penetrated through the desert by Siwah and Fezzan, and procured much information concerning the interior countries, which he carried to Tripoli. He returned to Fezzan in January 1800; and on 6th April of the same year, he wrote home that he was upon the point of setting out with the caravan to Bornou. No intelligence of his subsequent proceedings was ever received from himself, but Captain Clapperton learned, many years afterwards, that he had died at Nyffe.

In 1804, Park was again employed, and received the charge of a large party of artificers and soldiers, accompanied with every requisite for the journey, the object of which was to explore the Niger to its termination, wherever that might be; though Park himself was firmly persuaded that it was nowhere but in the ocean, and probably at the Zaire, or river of Congo. He left the Gambia in the summer of 1805, and reached the Niger, after a difficult and disastrous journey of five hundred miles. Being assured of protection by Mansong, the king of Bambarra, and having received his permission to build a boat at any part of his dominions, Park chose Sansanding for the purpose; and having succeeded in building a large schooner, which he named the Joliba, he set out on his adventurous voyage on 17th November 1805. No farther intelligence was ever received from himself; but it has been since ascertained that he perished, through the hostility of the natives, at a difficult passage of the Niger, near Boussa.

In 1811, Timbuctoo was visited by Adams, an American sailor, who had been shipwrecked on the coast, and made a slave by the Moors; and in 1815, Riley, an American shipmaster, having also been wrecked, met with a merchant, named Sidi Hashem, from whom he learned many particulars concerning the course of the mysterious Niger. All eyes were now turned to the Zaire as the most probable outlet of the great river; and in 1816, an expedition was fitted out, under the charge of Captain Tuckey, for the purpose of exploring its upward course. But the commander himself, and many of his party, having died of fever, the expedition was abandoned by the survivors. In 1818, it was resolved by the British government to appoint a Viceconsul to reside at Mourzook, the capital of Fezzan; and Mr. Joseph Ritchie was selected for the undertaking. He was joined at Tripoli by Captain G. F. Lyon, R. N.; and on the 25th March 1819 they left Tripoli for the interior. They reached Mourzouk on the 4th of May. Mr. Ritchie died there, after a long illness, on the 20th of November following; and Captain Lyon and his surviving companion, Belford, a shipwright, returned to Tripoli, where they arrived on the 25th March 1820.

The mission of Ritchie and Lyon was followed up by the appointment of Dr. Walter Oudney, Captain Dixon Denham, and Lieutenant Hugh Clapperton, R. N., to proceed to the interior of Africa by the way of Tripoli and Fezzan. These travellers, accompanied by William Hillman, a shipwright from Malta, and escorted by Boo-Khaloom, a merchant of Fezzan, and a party of Arabs in the service of the Bashaw of Tripoli, left Mourzouk 8th June 1822, and on the 4th of the following February they had the inexpressible pleasure of beholding from a rising ground "the great lake *Tchad*, glowing with the golden rays of the sun in his strength." Denham remained in Bornou, making exploratory journeys in various directions, while Oudney and Clapperton proceeded westward: Oudney died at a place called Murmur, 12th January 1824, but Clapperton reached Sokatoo, the capital of Sultan Bello, chief of the Fellatahs. During his absence, Denham was joined by Ensign Toole, of the 80th regiment, who had volunteered his services at Malta, but who died very soon after his arrival in Bornou; also by Mr. Tyrwhitt, who brought with him presents from the British government to the Sheikh of Bornou. The surviving members of this adventurous party returned to Tripoli from their interesting and successful journey, in January 1825. The termination of the Niger being still uncertain, Captain Clapperton was again appointed to proceed into the interior of Africa by the way of Guinea, which he accomplished successfully. He reached Sokatoo, but died there on the 13th day of April 1827, and his papers were brought home by his servant, Richard Lander, for whom was reserved the honour of solving the problem that had puzzled European geographers so many years in vain. Lander was immediately employed to proceed on a new expedition; and accordingly, accompanied by his brother John, he left the coast of Guinea for the interior, 31st March 1830, and on the 17th June reached the Niger at Boussa. They traced the course of the river downwards to the ocean, which it enters in the Bight of Benin. In a subsequent expedition, Lander perished in a skirmish with the natives.

While these expeditions were in progress, Captain, afterwards Major, Alexander Gordon Laing, of the African Colonial Corps, who had been sent home with dispatches after the unfortunate Ashantee war, was engaged by government to proceed on a

journey through the desert from Tripoli to Timbuctoo. After spending some time at Tripoli, he proceeded on his journey in 1826, and reached Timbuctoo; but having left that city, with the view of proceeding towards the west coast, he was murdered in his tent, at a halting place in the desert, and his papers carried off. A more fortunate result attended the efforts of René Caillie, a young Frenchman, who, having cherished from his earliest infancy a strong desire to become a traveller, proceeded to Senegal in 1816; and, after spending several years in travelling through the countries in the neighbourhood, finally left the vicinity of the Rio Nunez in April 1827, and, travelling along the Joliba, or Niger, by Jenné and the lake Dibbie, reached Timbuctoo on the 20th April 1828. He remained fourteen days in that city, then proceeded northwards through the Sahara, and reached the French consulate at Tangier in September following — the most fortunate of all the explorers of central Africa. All his predecessors are dead. Major Denham, after returning from Bornou, died at Sierra Leone; and another victim has lately been added to the list, in the person of Mr. John Davidson, a member of the Royal Geographical Society of London, who left Wedinoon in Morocco, towards the end of 1836, and was murdered in the desert, thirty-two or thirty-three days after, on his way to Timbuctoo.

At a time when the despotism of Buonaparte had closed every avenue of distinction but one to the youth of the Continent, John Lewis Burkhardt, a native of Zurich, and a cadet of one of the principal families in Switzerland, came to England, and offered his services to the African Association. Under their patronage he left England in 1809, and spent several years in Syria, Egypt, and Arabia, to perfect himself in the knowledge of the religion, the manners, and the language of the Mahometan Arabs, as preparatory to his journey into the interior of Africa. He took the name of Sheikh Ibrahim, and was very successful in maintaining his assumed character of a Mussulman. He transmitted to the association very valuable journals of his excursions in Syria, Egypt, Arabia, and Nubia; but, like his predecessor Ledyard, before he could accomplish his principal object, he was carried off by dysentery in October 1817. While these expeditions were in progress in Northern Africa, various exploratory journeys have been made by missionaries and others into the interior parts of South Africa from the settlements at the Cape of Good Hope, making us acquainted with the numerous tribes that possess those regions. Messrs. Cowan and Denovan perished, in 1808, in an attempt to penetrate from the Cape to the north-east coast; but a similar expedition, conducted by Dr. Andrew Smith, has lately proved more successful, adding considerably to our previous knowledge of the country and people, and contributing largely to the progress of natural history at least, if not of geography. This expedition started from Graaf Reynet in August 1834, and returned in the beginning of 1836, having penetrated several hundred miles beyond Latakoo, as far as latitude 25½° south, and 28° 50′ east.

The additions made to our knowledge of the interior parts of Africa by the journeys of the daring travellers whom we have endeavoured to commemorate, bears no proportion to their efforts, or to the expense that has been lavished upon this object; for Africa still presents one long extended blank of unknown regions. The interior of the wide continent of Asia is hardly better known; for no modern European has visited the countries that form the great empire of China, reaching from the Himalaya mountains, on the borders of India, to the range of the Altai, on the borders of Siberia. The interior of New Holland likewise presents another blank; and the wide range of the Antarctic ocean is yet to be explored. But the spirit of discovery, like the schoolmaster, has gone abroad; a spirit of innovation and change seems to be pervading all the earth. The very Hindoos, long crushed under the weight of a dark superstition, that seemed an insuperable bar to improvement, are now beginning to awake from their lethargy, and to desire to learn the language, the manners, and the customs of their European conquerors. The Chinese, too, the people of the celestial empire, the inhabitants of the central kingdom of the universe, who used to look with contempt on all the rest of mankind as barbarians, are beginning to feel the superiority of their visitors; and a general spirit of inquiry seems ready to awaken their minds from the long sleep of ignorance and prejudice in which they have been sunk. They have already learned that the barbarians have fire-ships, with which they can ascend rivers without the aid of trackers; and, perhaps, the day is not far distant when they shall see these fire-ships, and these barbarians, carrying the seeds of civilization and the blessings of knowledge and true religion, into the heart of their empire, along their far-famed, but hitherto little-known rivers, the Yang-tse-kiang, and the Whang-ho.

Of the geographical systems and notions of the Arabs, the Chinese, and the Hindoos, we have taken no notice, because, however curious and interesting they may be, they contributed little or nothing to the progress of *European* Geography. It is only of late years that they have become known in Europe, through the labours of European scholars; and it would, we conceive, have served no purpose to occupy a large portion of this chapter with dissertations upon the probable identity of places and countries vaguely described, and that receive different names from the geographers of the East and of the West. To the Chinese, however, we are still indebted for almost the whole of the knowledge we possess of the central regions of eastern Asia, the geography of which, MM. Remusat and Klaproth have endeavoured to illustrate from Chinese authorities. Travelling has long been a favourite pursuit, and the literary world has been deluged with volumes of voyages and travels; but it is only of late that societies have been instituted for the purpose of collecting, recording, and diffusing geographical knowledge, directing the travelling mania towards proper objects, and stimulating the exertions of travellers by honorary rewards. The *Geographical Society of Paris* has now been in existence fifteen years; the *Royal Geographical Society of London* has existed for seven; other similar societies have been established at Berlin, Bombay, Frankfort on the Main; and the result has already proved most beneficial towards the progress of our science.

CHAPTER II.

PRINCIPLES OF MATHEMATICAL GEOGRAPHY.

§ 1. — *Of the Earth, considered with relation to the other Celestial Bodies.*

ASTRONOMY exhibits to our view the globe of the *Earth*, balanced by its own weight, and revolving in the immensity of space with ten other planets round the resplendent luminary that distributes to each of them its portion of light and heat. Of these, the earth is, as may be seen from the table placed at the end of this chapter, the third in the order of distance from the sun, and the fourth in point of size. Its form is that of a globe, or sphere, and this spherical form is the basis of mathematical geography. That the earth is globular, will appear obvious from a few considerations. Were we placed on a wide plain, or on the surface of the ocean, no mountain would then intercept the objects situated within the range of our vision. Why then do not elevated objects only diminish in apparent size, as they recede from our view, without any portion of them being hid, as would certainly be the case if we were upon the same horizontal plane with them? Why do towers and mountains, when we recede from them, appear to sink below the horizon, the base disappearing first? and why, on the contrary, when we approach these objects from a distance, do their summits first come into view, then their middle parts, and last of all, their bases? These phenomena, which every one has an opportunity of observing, prove evidently that every apparent plane upon the earth is in reality a curved surface. It is the convexity of this surface which conceals from the spectator on the beach, the hull of the vessel of which he sees the masts and sails. But since we know that these things happen uniformly, towards whatever part of the earth we travel — since we find that this assemblage of curved surfaces is nowhere sensibly interrupted, it is impossible to avoid the conclusion, that the whole surface of the earth is curved on all sides in a nearly regular manner; or, in other words, that the earth is a body approaching in figure to a sphere.

The object at which the first observers of the stars chiefly aimed, was, doubtless, to discover fixed marks by which they should be enabled to recover their position, or direct themselves in their voyages. They remarked that the sun occupied, in the celestial hemisphere, a place opposite to certain stars, which every night were constantly visible over their heads, while other stars disappeared and re-appeared alternately. But their attention was particularly attracted by the *pole-star:* they remarked that this point in the heavens, itself immovable, appears to serve as a pivot, or *pole,* to the apparent motions of the celestial bodies. They next traced a *meridional line,* that is, a straight line on the ground, in the direction from the sun at noon to the pole-star; and however imperfect this first operation may have been, it was sufficient to mark out to them the four quarters of the world, usually denominated the *cardinal points.* Now, if they proceeded towards the north, they saw the pole-star take a higher place in the heavens, with regard to the *horizon.* If they went towards the south, the same star appeared to sink, and other stars, before invisible, appeared successively to rise. It was therefore impossible that the line whose direction they followed could be a straight line traced upon a horizontal plane; it could only be a curve — in short, an arc of a circle, corresponding to another arc of an imaginary circle in the heavens. But as the same changes of the horizon had everywhere taken place, it was natural to conclude that the earth had at least a circular form from north to south.

Astronomical observations were rendered perfect by repetition. The motions of the heavenly bodies were calculated from fixed epochs; and the periodical return of eclipses was determined. It was then easily perceived, that the sun rises sooner to those who dwell more towards the east, and later to others in proportion as they are removed to the west. This, however, could not happen, unless the surface of the earth were curved from east to west; for were it flat, the sun would begin to illuminate all parts of the same side at the same instant of time.

Lastly, when by a series of observations we are fully convinced that the eclipses of the moon are caused by the conical shadow of the globe of the earth, we have a complete confirmation of all the preceding proofs in favour of the rotundity of the earth; and we see, at the same time, that the globe of the earth is not subject to any great irregularity; since, in all possible positions, its shadow upon the disk of the moon is

* To economize space, *marginal references* have been dispensed with; but a substitute for these will be found in the *analytical table of contents* prefixed to the work.

found to be terminated by an arc of a circle. The numerous voyages which have been made round the world, have at length silenced all those who persisted in regarding the earth as a circular plane, or a hemispherical disk. Navigators, like Magellan and Drake, sailing from Europe, have pursued a course always towards the west; and without quitting this general direction, have returned to the place whence they set out. Upon a circular plane we might indeed perform a circular voyage, but only by continually changing the direction. Heemskerk, having wintered at Nova Zembla, confirmed what astronomers had concluded from the spherical figure of the earth: namely, that the days and nights near the poles extend to several months. Finally, Cook and others, in approaching as near as possible to the southern polar circle, found that the distance round was always diminished in proportion to the diminution of his distance from the pole; so that we have thus obtained an experimental proof of the roundness of the earth towards the south pole, as well as towards the north.

So many concurring proofs leave no room for reasonable doubts respecting the sphericity of the earth. Respect for the Sacred Writings, which, in speaking of the earth, employ expressions borrowed from ordinary language, ought not to induce us to reject a physical truth altogether foreign to the moral truths which religion undertakes to teach. In vain does ignorance demand how the earth can remain suspended in the air without any support. Let us look upon the heavens, and observe how many other globes roll in space. The force which supports them is unknown to us; but we see its effects, and we can investigate the laws according to which these effects take place. Everything on the surface of the earth is impelled in straight lines towards its centre; the antipodes see, in like manner as we do, the earth under their feet, and the sky over their heads. What should we gain by supposing, with Homer, the earth to be supported by a range of columns guarded by Atlas? or by imagining it to rest upon nine pillars, like the Scandinavians? or upon four elephants, according to the opinion of the worshippers of Bramah? Upon what would these elephants or these columns rest? Our thoughts, however far they proceed, must always at length stop short, and, affrighted, recoil from that infinity which surrounds us on every side, and which it is folly to attempt to comprehend.

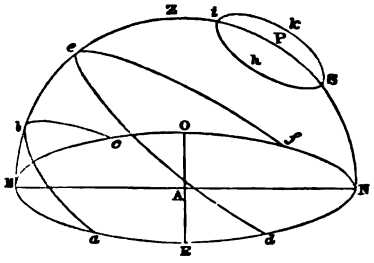
But some more rational observers will say, Do not the Andes and the Alps make it evident that the earth is an irregular body, and not at all round? We answer: The highest mountain known, which is Dwawalaghiri in Nepaul, rises to about 28,077 English feet above the surface of the sea. This height is nearly 1-5000th of the earth's greatest circumference, and 1-1600th of its axis. Upon an artificial globe of twenty-one feet in circumference, or of 6⅔ feet in diameter, Dwawalaghiri could only be represented by a grain of sand less than one-twentieth of an inch in thickness. Irregularities so imperceptible do not deserve to be taken into consideration. We shall see, besides, as we proceed, that the true differences which exist between our globe and a perfect sphere, are known, measured, and estimated. But before entering on this subject, it is necessary to point out more precisely the nature of some of the relations which connect this earth with the other heavenly bodies.

On directing our view to the heavens, the stars appear to move from east to west, each describing a portion of a circle. If we observe this motion more attentively, it appears to be performed about an immovable point, which has received the name of *pole*, and the star which is situated nearest to it is called the *pole-star*. The sky presents itself under the appearance of a sphere; there must therefore be, in the hemisphere which is invisible to us, another immovable point: this point is the *south celestial pole*, as that which we see is the *north celestial pole*. The imaginary line which passes through these two points is named the *axis* of the world. This line passing through our globe forms at the same time its axis, and intersects the surface of the earth in two points corresponding to the poles of the heavens, and denominated *terrestrial poles*. That which answers to the pole-star, is called the *north*, or *arctic pole*; the opposite pole is named the *south*, or *antarctic pole*.

The point of the horizon which corresponds to the north pole is called the north, and the opposite point is the south. The circle perpendicular to the horizon, which passes through the poles, is called the *meridian*; it divides the visible celestial hemisphere into two equal parts; so that the stars, at the moment when they appear upon this circle, are at the middle of their apparent course. It is the passage of the sun over this circle that determines the instant of apparent noon.

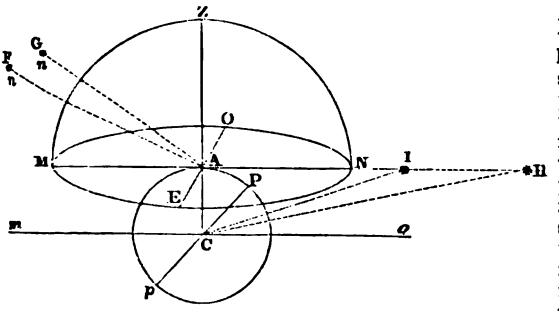
We have already spoken of the *meridian line*, or of the line which joins the north point of the horizon with the south. A line perpendicular to the meridian line, and conceived to be extended both ways till it meets the horizon, marks upon this circle two opposite points, each 90 degrees distant from the north and south; and to which are appropriated the names of *east* and *west*.

We may illustrate these definitions upon an artificial globe, or by means of the annexed figure.



Let the circle N E M O represent the horizon, and the point A the centre, at which the observer is placed; the letters *a b c* and *d e f*, will indicate portions of circles which the stars appear to describe about the pole. Those stars whose polar distance is not greater than the arc P N, which measures the elevation of the north pole above the horizon, appear to describe complete circles, as S *h i k*. The point N marks the north point of the horizon, M the south; and consequently M N represents the meridional line. The celestial meridian is represented by the semicircle M Z N, of which the plane is supposed perpendicular to that of the horizon N E M O, and which passes through the points M and N. This circle divides the arcs *a b c* and *d e f* into two equal parts at the points *b* and *e*. The east point of the horizon is represented by the point E, and the west by the point O. It is from E towards O that the stars appear to move, passing in the middle of their course through some point of the celestial meridian M Z N.

The true cause of these appearances is the motion of the earth round its own axis from west to east in the space of twenty-four hours. We proceed now to explain this motion by means of another figure, which represents the globe of the earth. We shall suppose the point A to be the place of the observer, E M O N his horizon, and the straight line P*p* to represent the axis round which the earth performs its motion of rotation. It is easy to perceive, that the horizon of the observer, since it turns along with him during the rotation of the earth, must advance towards the stars successively,



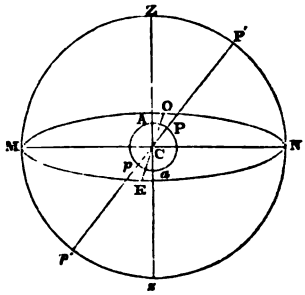
so as to give them the appearance of gradually approaching the horizon, in the same manner as a vessel leaving or approaching the land causes the objects on shore to appear to the eyes of an observer on board to be in motion.

As the plain M Z N of the meridian revolves at the same time with the horizontal plane N E M O, to which it is perpendicular, it must point successively to the different stars, which will then appear in the middle of that part of their course which they describe above the horizon. As soon as any star touches the western verge of the horizon, that star appears to set, and ceases to be visible until the motion of the earth has brought back upon it the eastern boundary of the same circle.

This explanation gives a direct reason for the diurnal appearing and disappearing of the stars and of the sun. But in order to conceive the use which is made of these celestial appearances in astronomy and geography, it must be observed that the celestial motions are measured only by *angles*, without any regard to absolute lengths and real distances. For example, if the star *n* appear first above the horizon in the direction of the visual ray A F, and be seen afterwards in the direction of the ray A G, the eye of the spectator measures only the angular space F A G; it determines only the arc of the circle comprehended in this angle, and not the length of the radius. This arc is estimated in degrees, and parts of a degree. The circumference of every circle, whether a great circle or a small, is supposed to be divided into 360 degrees. Each degree is divided into 60 minutes, and each minute is subdivided into 60 seconds.

It is easy to see, that with regard to the heavenly bodies we may substitute for the plane N E M O, which touches the earth, a parallel plane, passing through the centre. The reason is, that when a star situated at I appears in the horizontal plane which touches the earth at the point A, an observer, placed at the centre of the earth, would

see the same star upon the line C I, so that it would appear elevated only by the angle I C *o*, which will be so much the smaller, according as the star is more distant. The figure renders this evident with regard to the star situated at the point H. The distance of the stars being almost infinite, compared with the semi-diameter of the earth, which separates the place of the observer from the centre of the globe, this angle becomes insensible for the fixed stars, and very small for the planets.

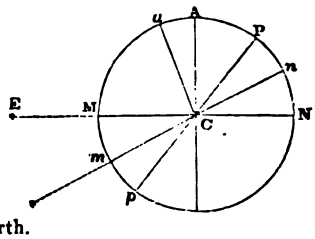


We may substitute therefore, without error, another diagram, instead of the preceding, assuming for the horizontal plane, with regard to the stars, the plane N E M O passing through the centre of the earth, and parallel to the plane touching it in A. We may conceive, in the same manner, the plane of the celestial meridian M Z N, to be extended indefinitely from the centre C of the earth, through which it must necessarily pass, since it passes through the axis P *p*. This plane determines upon the surface of the earth a circle P A *p*, which passes through the poles. This circle is the terrestrial meridian of the place A, and at the same time, of all the places situated upon its circumference.

We ought to observe here, that the horizon represented by the circle N E M O, and which passes through the centre of the earth, is called the *rational horizon*, to distinguish it from the circle whose plane is a tangent to the surface at the point on which the spectator is placed, and which is called the *sensible horizon*.

The line drawn from the centre of the globe through the place of an observer, determines the position of a point Z in the heavens perpendicularly over his head, and called the *zenith*. The same line produced through the globe, marks, in the opposite part of the heavens, another point *z*, which is called the *nadir*.

The position of the line Z A C, which is called the *vertical line*, is ascertained by the direction which heavy bodies take in falling, as that of the horizontal plane is indicated by the surface which water at rest, and of inconsiderable extent, naturally presents. The vertical line, or that which is ascertained by a thread stretched by a plummet, is perpendicular to the horizontal plane. As gravity tends everywhere towards the interior of the globe, it acts at *a* in the direction *z a* opposite to Z A; in both places, bodies fall towards the surface of the earth. The people placed at *a*, having their feet opposite to the feet of those who are at A, are called the *antipodes* of these last. The *zenith* of the one is the *nadir* of the other.

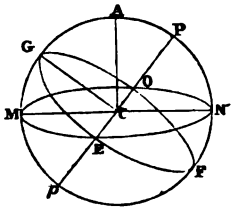


It follows from this definition, that the horizon must change its position relatively to the stars, when the observer changes his place upon the surface of the earth. If he removes, for example, from A to *a*, directly along the same meridian from north to south, the horizontal visual ray N M, will become *n m*, so that a star E, situated upon the prolongation of the former ray, will appear to be elevated above the horizon *m n*, by the angle E C *m*, which is precisely equal to that formed by the radii C A, *C a*, drawn to the centre of the earth.

It was upon this principle that Posidonius, having observed that the star *Canopus* appeared *in the horizon* at Rhodes, while at Alexandria in Egypt it appeared elevated by the 48th part of the circle, or 7 degrees and a half, concluded that Rhodes was distant from Alexandria, in the direction of the meridian, the 48th part of that circle. It is true, indeed, that the estimate of the Greek philosopher was inaccurate. Still, however, his principle is correct, and it is the same that is employed at the present time; the question being always to find, by means of observations made upon the same star, what ratio the arc A *a* of the meridian passing through the two points of observation, bears to the whole circumference of the circle. When this ratio has been determined, and the itinerary distance between the two points also measured, we are enabled to compute the whole distance round the terrestrial meridian.

By the observation above described we ascertain the relative position of two places, *a* and A, in respect of north and south; but in order to determine the absolute positions of these places, some fixed term of comparison is required. For this purpose we conceive a plane to pass through the centre of the earth at right angles to the axis

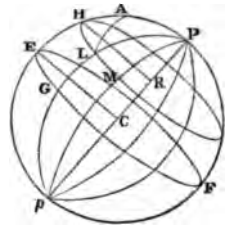
of rotation, determining upon its spherical surface a circumference G E F, every point in which is at the same distance from the poles P and *p*. This circle is called the *equator*. Now, if an observer be situated upon the equator, the two poles will appear exactly in the horizon; but as he removes from the equator towards either pole, that pole to which he approaches will rise above, while the other sinks below the horizon.



The height, or elevation of the pole above the horizon of any place, is equal to the angular distance of that place from the equator, estimated in the direction of the meridian. For the angles A C N and G C P being right angles, if we take away the common angle A C P, there remains the angle A C G equal to N C P. It is evident also, that the height M C G, to which the equator rises above the horizon, is equal to the complement of the angle A C G. It is sufficient, therefore, to determine the altitude of the pole above the horizon of any place, in order to find the angular distance of that place from the equator.

In the regions of the globe where one of the poles appears elevated above the horizon, those stars which never set, called circumpolar stars, furnish directly the means of determining the height of the pole. As they appear to describe circles about the celestial pole, each must appear equally removed from it at every point of its course; and as they twice pass the meridian during a diurnal revolution of the earth, namely, once above the pole, and once below it, we have only to measure their angle of elevation in each of these positions, and to take the arithmetical mean between the results, in order to obtain the elevation of the pole.

It is not enough to know merely the distance of a place upon the earth from the equator; because this distance is common to all the places which are situated upon a circle traced upon the surface of the globe by a plane parallel to the plane of the equator, and passing through the place in question. In order to distinguish places equally distant from the equator, it is necessary to know their meridians, the meridian being different for each place. The observation of the celestial motions may here be again successfully employed in the manner which we are now about to point out. We have seen that the planes of the different meridians, P A *p*, P L *p*, P M *p*, &c. intersect each other in the axis P C *p*; but since all these meridians turn upon this line, they must also correspond successively to the same star; and the time which elapses between the passage of two meridians, containing between them any angle, will thus be to the time of the entire rotation, as the angle contained by these meridians is to the whole circumference of the circle. Hence, if we could measure the first of these intervals, in order to compare it with the second, we should be able to deduce the angle which the two proposed meridians form with each other. To obtain this comparison, it is necessary that we should be able to indicate, by a signal visible at the same instant of time at places under both meridians, the moment at which a star appears upon one of them: this instant must be noted, and a well-regulated clock will measure the time which elapses till the same star appears on the other meridian.



When we have determined by this method the angle which the meridian P L *p*, passing through the place L, makes with the meridian P A *p*, passing through a given place A, the place L becomes entirely determined, provided that we already know its distance G L from the equator E G F; for it will necessarily be situated at the intersection of the semicircle P L *p*, and the parallel L M, drawn at this given distance.

The shortest distance of a place from the equator is termed its *latitude*. This distance is measured by an arc of the meridian comprehended between the place and the equator. Latitude is north for those places which lie between the north pole and the equator, and it is south for places in the opposite hemisphere.

The angle contained by two meridians, measured by an arc of the equator, or of a circle parallel to it, is termed the *difference of longitude* of the places situated under these two meridians. That we may estimate these differences in an absolute manner, it is necessary to assume a *first meridian*, the choice of which is altogether arbitrary, and has varied at different times. The absolute longitude of a place is therefore the angle which the meridian of that place forms with the first, or conventional meridian.

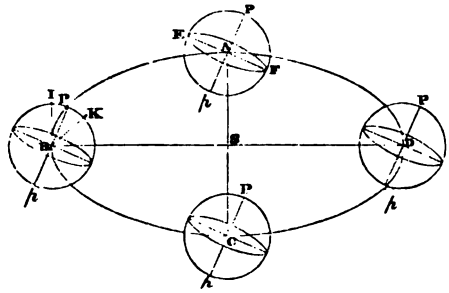
We have just seen that the determination of the difference of longitude of two

places upon the earth requires the use of a signal visible at the same time at both places. It is evident, that for places separated by any considerable distance, the only signals sufficiently elevated must be sought for among the stars. It is indeed by means of the celestial bodies that the geographer determines the position of places. We must therefore acquire some idea of their motions, particularly of the motions of the sun and moon.

Every attentive observer of the heavens must have remarked that the sun, besides the apparent diurnal motion which it has in common with all the stars, appears, in the course of a year, to change its place in a two-fold manner. First, it appears to advance towards one of the poles, and then to fall back and approach towards the other, or to oscillate in the direction of north and south. Again, if we observe its place among the stars, it appears either that the sun recedes daily towards the east, or that the stars advance in the opposite direction; for the stars which we see at any time set immediately after the sun, are, on the following evening, lost among its rays. Some days afterwards they re-appear in the east, and their rising precedes daily more and more that of the sun. At last, after a year, or about 365 days, the sun and stars are again observed in the same relative position.

The complexity of these motions is also increased by the apparent motions of the other planets, which sometimes seem to be hurried along by an impetuous vortex, at other times to become stationary, and sometimes even to acquire a retrograde motion. The impossibility of reconciling this apparent confusion of the heavens with the most simple principles of physical science, involved Ptolemy, Tycho-Brahé, and all others who, like them, maintained the doctrine of the immobility of our earth, in a labyrinth of contradictory hypotheses. Copernicus reduced this chaos into order and regularity, by supposing, with some ancient philosophers, that while the earth turns upon its own axis from west to east in the interval of a day, it has at the same time a motion in absolute space from west to east, and performs, in a plane inclined to the equator, an entire revolution round the sun in the space of a year.

The axis of the earth, with regard to the plane of the ecliptic, that is to say, the plane of the circle which the centre of the earth describes in its annual motion round the sun, remaining always parallel to itself, presents alternately each of its poles towards the sun. This phenomenon may easily be illustrated by the help of the annexed



diagram, in which the lines P p, which are parallel to each other, represent the axis of the earth, S the centre of the sun, and A B C D the elliptic curve which the earth describes about the sun. In consequence of the parallelism of the axis, the pole P, which is the one nearer to the sun when the earth is at B, becomes the more remote when the earth is at D; because in the former position the inclination of the part B P of the earth's axis is directed towards the interior of the curve A B C D; but in the latter it is directed towards the exterior. At the two intermediate points, A and C, the axis P p is inclined neither towards the sun nor from it; but in every other point of the orbit A B C D, it necessarily takes an inclined position relatively to the sun. These different positions, being the cause of the difference of the seasons, deserve, however, to be explained more in detail.

It is easy to see that the surface of the earth is at every instant divided into two parts, the one illuminated by the sun, and the other deprived of his light. The common boundary of these two parts is determined by a great circle, the plane of which is perpendicular to the line drawn from the centre of the sun to that of the earth. To this line we suppose the sun's rays to be parallel; seeing that by reason of the great distance of the sun, and the small diameter of the earth, all convergency or divergency becomes insensible. It is evident, therefore, that the above circle, which is denominated the *circle of illumination*, is the boundary of the hemisphere which the earth presents to the sun. Hence the equator being a great circle, and consequently divided into two equal parts by the circle of illumination, each point of the equator must necessarily be illuminated by the sun during half the time that the earth requires to perform its diurnal revolution. It is evident besides, that all the circles parallel to the equator are unequally divided by the circle of illumination, and that this inequa-

lity becomes more sensible according as they are farther removed from the equator. In the case in which the greater of the two portions lies upon the illuminated side of the earth, the length of the day must exceed the length of the night. With regard to the whole region comprehended within the circle I K, described by the point I, there can be no night, since that circle lies entirely upon the illuminated side of the globe.

The other hemisphere must necessarily present an appearance in every respect the reverse of that which we have now described. The length of the days must there diminish as we approach the pole; and the polar region, lying entirely on the dark side of the earth, is buried in perpetual night.

It is also evident, that while the earth revolves upon its axis, all the points of the circle traced out on the surface by the straight line S B, which joins the centres of the earth and sun, come successively to receive the perpendicular rays of the sun; but if we remove from that circle towards either pole, we enjoy only the oblique rays.

Let us now consider the length of the days and nights at the time when the earth is situated at the point A or C. In this position the solar ray S A or S C, is directed towards the centre of the earth, in a line perpendicular to the axis; and the equator, as well as all the circles parallel to it, are divided into equal parts by the circle of illumination: but since the extent of the enlightened part of the earth is equal to that of the dark part, the length of the day must be equal to that of the night, at every point on the surface of the earth. The epochs at which the centre of the earth is in these two positions have been denominated the *equinoxes;* and as the sun is then in the plane of the equator, that circle has thence received the name of the *equinoctial line,* or simply, the *line.*

The time which elapses during the earth's motion from the point A to the point B, and during which the pole P approaches nearer to the sun, is denominated the *astronomical spring,* for the hemisphere E P F. As the earth, setting out from the vernal equinox, advances in its orbit, the plane of the equator becomes more and more depressed in relation to the sun, which appears to rise towards the pole. When the sun has attained its greatest apparent altitude at the point B, the semi-axis B P of the earth has then its greatest possible inclination towards the sun, which at this season appears nearest to the pole P: the day on which this occurs is the longest of the year. This situation of the axis in respect of the sun undergoes very little variation for several days, and the circle of the sun's apparent path is called the *summer solstice.* After this the sun appears to descend in the heavens, and returns to the plane of the equator. The earth having arrived at the second equinox C, autumn commences in the hemisphere which we inhabit. Having crossed the equator, the sun appears to descend below that circle, while the semi-axis C P inclines, at the same time, more and more in the opposite direction, until the earth has reached the point D; the axis then preserves for several days almost the same inclination, and the sun is at the *winter solstice.*

In the opposite hemisphere E *p* F, the succession of the seasons is reversed, so that the spring of this hemisphere corresponds to the autumn of the other, the summer to the winter, and so on.

We remark further, that the orbit of the earth A B C D, being an ellipse or oval, having the sun in one of its foci, the earth employs a greater number of days in moving from the vernal equinox A, through the summer solstice B, to the autumnal equinox C, than in describing the other half of its orbit. This circumstance gives to the northern hemisphere which we inhabit, the advantage of a spring and a summer a little longer than those enjoyed by the inhabitants of the southern hemisphere.

The early astronomers, in order to estimate more correctly this apparent motion of the sun, referred it to the constellations or groups of fixed stars through which he appears successively to pass. These are twelve in number. The following are their names, and the characters which are used for representing them:

♈ Aries,	♋ Cancer,	♎ Libra,	♑ Capricornus,
♉ Taurus,	♌ Leo,	♏ Scorpio,	♒ Aquarius,
♊ Gemini,	♍ Virgo,	♐ Sagittarius,	♓ Pisces.

From a fancied resemblance of these groups of stars to the animals whose names they bear, astronomers, in the infancy of the science, gave the name of *Zodiac* (from a Greek word signifying *animal)* to the zone occupied by the twelve constellations. Each constellation is called a *sign.* It is proper to remark, that, in consequence of a peculiar but very slow motion of the axis of the earth, the constellations no longer correspond to the same points of the terrestrial orbit as in ancient times; but, as we confine the name of *signs* to the twelve divisions of the circumference of the circle which measures the whole revolution of the earth, and as these divisions, each of which

contains 30 degrees, do not change, the vernal equinox always corresponds to the first point of the sign *Aries;* the summer solstice coincides with the first point of *Cancer;* the autumnal equinox falls upon the first point of *Libra;* and the winter solstice upon the first point of *Capricorn*, although the constellations or groups of stars to which the names belong have ceased to correspond to these seasons.

In consequence of the inclination of the plane of the terrestrial equator to that of the ecliptic, the sun passes successively through the zenith of all the points of the earth's surface comprised between the two circles parallel to the equator, upon which the rays of the sun fall vertically at the two solstices. These limits, at which the sun appears to stop and then return in the same course, have received the name of *tropics.* That which corresponds to the summer solstice, is called the *tropic of Cancer*, and the other, the *tropic of Capricorn.*

The circles which circumscribe towards each pole, the part of the earth's surface deprived of the solar rays when the sun is at its greatest distance from the equator in the opposite hemisphere, are denominated polar circles; the one is called the *arctic*, and the other the *antarctic* polar circle.

The surface of the earth is thus divided into five *zones*, or *belts*, by the polar circles and the tropics: those which are enclosed by the polar circles, being deprived of the light of the sun for a part of the year, and during the other part, receiving its rays but very obliquely, have deservedly received the name of *frigid*, or *frozen zones.* Two other zones, one in each hemisphere, comprehended between the polar circle and the tropic, receive the sun's rays less obliquely than the frozen zones, but never vertically; these are the *temperate zones.* Lastly, the zone comprehended between the two tropics, every point of which passes twice under the sun in the year, and which receives constantly the solar rays, in a direction very little oblique, has obtained the name of the *torrid zone.*

The ancient geographers frequently made use of a division of the earth into climates, which was founded upon the length of the day, compared with that of the night, at the summer solstice. The climates are counted by the difference of half an hour, until they reach the polar circle, where the differences succeed each other more rapidly; from that circle to the pole they are reckoned by months.

The contrast of the seasons, in the hemispheres situated to the north and to the south of the equator, has given rise to certain distinctions which it is necessary to know, as they are sometimes met with in the old books of geography. The people who live under the same meridian, and at the same latitude, on opposite sides of the equator, are called *antœci;* they reckon the same hours of the day at the same instant, but they have opposite seasons. Those who live under opposite meridians, upon the same side of the equator, and at equal distances from it, are called *periœci:* they reckon at the same instant opposite hours, the first having midnight when the second have mid-day; but being on the same side of the equator, they enjoy the same seasons.

The ancient geographers also distinguished the inhabitants of the earth according to the projection of their shadows. They called those who inhabit the two temperate zones *heteroscii*, because their shadows, being always turned towards that pole which is elevated above their respective horizons, fall consequently in opposite directions. The inhabitants of the frozen zones, to whom, at one time of the year, the sun never sets, see that luminary make a complete circuit round the heavens, so as to project their shadows in all directions; hence they have been called *periscii.* Lastly, the inhabitants of the torrid zone are called *amphiscii* or *ascii*, because their shadows, which are almost nothing at mid-day, are directed by turns towards both poles.

We pass on to a distinction of more importance. In considering local phenomena, we distinguish three positions of the *sphere*, that is, of the assemblage of the different circles which we have now pointed out, and which serve to determine the relative positions of the heavenly bodies.

To the inhabitants at the equator, the sphere is said to be *right*, because the plane of that circle passing through their zenith is, with regard to them, perpendicular to the horizon; and hence the heavenly bodies, which, in their apparent diurnal motion, describe parallels to the equator, appear to rise and set vertically in reference to the horizon. To the people who dwell between the equator and the poles, the sphere is said to be *oblique*, because the equator cutting their horizon obliquely, the diurnal courses of the heavenly bodies are inclined to the horizon. Lastly, at the poles, the horizon coincides with the equator, so that the heavenly bodies describe circles parallel to the horizon: to an inhabitant of the pole, therefore, were there any such, the sphere would appear *parallel.*

As the limits of the zones and of the climates depend upon the inclination of the axis of the earth to the plane of the ecliptic, it is of importance to determine this

inclination. We may easily discover it by observing at the same place the greatest and least latitude of the sun, when he passes the meridian at the summer and winter solstices. For, since in both cases the sun is equally distant from the equator, on the one side and on the other, this circle must cut the meridian at a mean altitude between the extreme altitudes of the sun; and the difference of these altitudes will be double of the angular distance to which the sun recedes from the equator towards the north and south. By observing the solstitial altitudes we are therefore enabled to determine at once, both this distance, and the position of the equator above the horizon, as well as the latitude of the place of observation.

At Paris, for example, the sun, at the summer solstice, rises to 64° 38′ above the horizon, and to 17° 42′ at the winter solstice. The sum of these altitudes is 82° 20′, of which the half is 41° 10′: this is the height of the equator above the horizon of Paris; and, taking its complement to a right angle, or to 90°, we find that the distance of the equator from the zenith, or the latitude of Paris, is 48° 50′.

But subtracting the one of these altitudes of the sun from the other, we find a difference of 46° 56′, the half of which or 23° 28′, is the distance in degrees and minutes to which the sun recedes from the equator towards either pole. Such is the angle which the planes of the equator and ecliptic make with each other.

This is what is called the *obliquity of the ecliptic*. It is not invariable; observations, joined with the calculation of the forces which produce the motions of the planets, have shewn that the inclination of the terrestrial equator is subject to a diminution of about 47″ in a century, till it reaches a certain limit which is not yet exactly determined, after which time it will begin to increase. The terrestrial zones vary therefore in proportion to this change. By assuming the mean of the present obliquity of the ecliptic, we find that if we divide the surface of the earth into 10,000 equal parts, the torrid zone will occupy 3982 of these parts, the two temperate zones, 5191, and the two frigid zones the remaining 827 parts.

The two combined motions of the earth produce a difference in estimating *time*, which affects the methods by which geographical positions are determined. We distinguish several kinds of *days* and of *years*.

The *tropical* or *solar year* is the time which the earth occupies in returning to the same point of the ecliptic. It consists of 365 mean days, 5 hours, 48 minutes, 50 seconds, and is denominated the *tropical year*, because this interval of time must elapse, in order that the seasons may return in the same order.

In consequence of the apparent motion of the poles, or of the axis of the earth, the equinoctial points, as well as all the other points of the ecliptic, appear to have a retrograde motion with regard to the stars. This motion is denominated the *precession of the equinoxes*. Astronomers have estimated it at about 50″.1 in a year; and the time which the earth occupies in passing through this arc must be added to the tropical year, in order to obtain the time of a revolution in respect of the stars. The period of this revolution is named the *sidereal year*, and consists of 365 days, 6 hours, 9 minutes, and 10 seconds.

The length of the astronomical *mean* day, which is divided into 24 hours, is determined by the interval which elapses between two consecutive passages of the sun over the meridian of the same place, supposing this apparent motion of the sun to be performed with an uniform velocity. But it is necessary to observe, that our earth does not occupy quite 24 hours in its rotation, on account that in the same time which it employs in revolving round its axis, it advances in its orbit towards the east about a degree in space, corresponding to four minutes, or more exactly to 3 minutes 56 seconds of time. Hence it follows, that the interval between two passages of a fixed star over the same meridian, which measures the true time of the earth's rotation, or of the *sidereal day*, is only 23 hours, 56 minutes, 4 seconds. The sidereal day can scarcely be employed for measuring time in civil life, because the sidereal hours never coincide with the solar hours.

We make use therefore of the *solar day*, that is, of the time of a revolution of the earth about its axis, in reference to the sun; but this time is not the same at all seasons of the year. This inequality arises from two distinct causes: the oblique position of the ecliptic with regard to the equator, and the inequality of the apparent motion of the sun in the ecliptic. By reason of the obliquity of the ecliptic, the arc of the equator which passes the meridian in the same time with the diurnal arc of the ecliptic, is not always equal to it, but is sometimes greater and sometimes less. With regard to the second cause, we observe that the sun, being placed in one of the foci of the elliptic orbit of the earth, appears to move more slowly in the six northern signs than in the six southern; and this difference of velocity is sufficient to produce

an inequality in the diurnal arcs of the equator. It results from the combination of these two causes, that the length of the solar day, compared with the time of the earth's rotation, is sometimes less and sometimes greater than twenty-four hours; and this inequality will always be greatest when the two causes which we have just explained concur in accumulating the differences in the same direction. The series of these differences forms what is called the *equation of time*, or the quantity which, if we wish to get the *mean* or astronomical time, must, at certain seasons, be added to, and at other seasons subtracted from, the hour indicated by the sun, or the *true time*. Now, it is for mean time that the astronomical tables are constructed, by the help of which we calculate the motions of the stars, and from these motions deduce the geographical positions of places on the earth.

We have now considered the earth in relation to the sun; but geography also derives essential aid from the theory of the motions of the moon. This satellite of our planet performs its revolution round the earth in 27 days 7 hours, 43 minutes 11 seconds, usually called a *periodical month*. It is to be observed, however, that the moon employs more than this time to return to the sun after each conjunction. The cause of this difference is, that the earth, and consequently its satellite, the moon, advances in the ecliptic while the moon is describing her orbit; so that before the moon comes into the same position relatively to the sun, 2 days and about 5 hours elapse beyond the time required for completing a revolution round the earth. The whole time occupied in returning to the sun is 29 days 12 hours, 44 minutes 2.8 seconds. This interval of time is called a *synodical month*, or *lunar month*. It commences from the moment when the moon is directly between the sun and the earth, in which position the moon is said to be in *conjunction*.

In describing its orbit, the moon, with regard to the sun, assumes various situations, from which arise its divers aspects, or *phases*. The moon being an opaque body, can be seen only in as far as it reflects the light that it receives from the sun; it can be visible to us, therefore, only when it begins, after being in *conjunction*, or in the same straight line with the sun, to turn towards the earth a portion of its enlightened disk. This portion increases according as the moon recedes from the sun, until it arrives at the point of its orbit opposite to the sun, when, the earth being between it and the sun, we see the whole enlightened hemisphere; the moon then appears full, and is said to be in *opposition* with the sun.

The conjunction and opposition of the moon with regard to the sun, or the new and full moon, are what are called the *syzygies*. When the moon is distant from the sun a fourth part of the circumference, it is in *quadrature*, and shows only one-half of its enlightened hemisphere. It is the first or last quarter, according as the round edge of the enlightened part is towards the west or east.

One would be led to suppose that the moon, every time it comes into conjunction with the sun, ought to conceal from us the whole, or, at least, a part of the disk of the sun; and that every time it is in opposition, it ought to pass through the shadow which the earth projects behind it; so that there would be, in the former case, an *eclipse of the sun*, and in the latter, an *eclipse of the moon*. These phenonema do not, however, occur at every new and full moon; and the reason is, that the plane of the moon's orbit is inclined to that of the ecliptic, and that these two planes meet one another only in their line of common section, which passes through the centre of the earth. Hence the moon is not situated in the plane of the ecliptic, except when it passes through one or other of the extremities of this line, that is to say, when it is in the *nodes* of its orbit. When the conjunctions and oppositions take place at the same time that the moon is in, or near, its nodes eclipses will happen; in the opposite cases, no eclipse takes place. We proceed now to point out in what manner the observation of these phenomena enables us to determine the longitude of a place upon the earth.

We have already seen, that in order to find the difference of longitude between two places, it is only required to ascertain precisely the hour which is reckoned at the same instant at each of these places, by the observation of some instantaneous phenomenon which can be seen at both.

The eclipses of the moon appear at first view the most favourable phenomena; for the entrance of the moon into the shadow of the earth takes place at the same instant for all the points of the hemisphere which is then turned towards the moon; that is, for all the places where the eclipse can be observed; besides, the spots visible upon the moon's face afford the means of making several observations upon the same eclipse, by marking with precision the time of the disappearing of each spot at its entrance into the shadow, or the *immersion*, and that of its re-appearing at its

coming out of the shadow, or the *emersion*. Supposing, then, that we have determined at each place the true time of this observation, the difference of these times, converted into degrees of the equator, will give immediately the difference of the longitudes. But eclipses of the moon present this great inconvenience, that the instant when the lunar disk enters into the true shadow of the earth, that is to say, the instant which marks the commencement of the eclipse, can never be assigned with precision; we cannot therefore be certain of not erring a few seconds of time in the determination of the phases of an eclipse of the moon; for this reason, the use of lunar eclipses for determining longitudes is now generally abandoned.

The use of the eclipses of the satellites of Jupiter, for the purpose of finding longitudes, was first proposed by Cassini in 1668. The theory of these eclipses is the same with that of the eclipses of the moon; for the satellites of Jupiter, when placed in circumstances similar to those which produce the eclipses of the moon, fall, in like manner, into the shadow of their primary planet: and if we observe at the same time, at several places, their immersions and emersions, we may make the same use of these, for the determination of the longitudes, as of the eclipses of the moon. But here, as in the eclipses of the moon, the precise moment of immersion and of emersion is always a little uncertain; particularly with regard to the second and the third satellites. Nevertheless, the use which may be made of them has induced astronomers to frame tables for predicting their immersions, in order that corresponding observations at different places may not be necessary.

The eclipses of the sun are no less proper than those of the moon, for determining longitudes. It is sufficient for this purpose that we observe at each of the places the beginning or the end of the same eclipse; but the calculation becomes more difficult than in the case of a lunar eclipse, because the relative situation of the sun and the moon is not the same for the different parts of the earth's surface at which these two bodies are visible at the same time. The case of the moon is the same as that of the clouds, which, seen from a particular point, appear situated under the sun, and project their shadows over a limited space, beyond which the sun shines in all its splendour. This spectacle varies continually, according as the sun, the cloud, and the spectator, change their situations. To employ the observation of a solar eclipse for the determination of longitudes, it is necessary to determine several of its phases, but particularly the beginning and the end; to deduce from thence the middle of the eclipse, and to obtain from the astronomical tables the proper *data* for fixing the respective positions of the lines described by the centre of the sun and that of the moon during the eclipse, in order that we may be able to calculate the instant when these two bodies were in conjunction. If we know, then, the hour at each of two places corresponding to this same instant, the difference of the hours will indicate the difference of the longitudes of these places. But the eclipses of the sun do not give the longitudes of places with much precision. The celestial phenomenon of most frequent occurrence, which can be properly employed for the determination of the longitude, is that which is called an *occultation*, or the passage of a star behind the disk of the moon; it is, at the same time, one of those which may be observed with much precision. It is necessary, in the first place, to determine from the observation the moment when the centre of the moon is in conjunction with the star: this fixes the absolute position of the moon. In the next place, we must find, either by means of calculations made beforehand, or by the comparison of corresponding observations, the hour it was, at the moment of this conjunction, at a place whose position is known. The difference of longitude is then obtained as in the other methods.

All these methods evidently resolve themselves into the following proposition: "*To determine, with reference to the place of which the longitude is sought, the position of a celestial body at a given moment, and to deduce from this position the hour it was at the same instant at another place, of which the situation is previously known.*" Hence it follows that, without waiting for a celestial phenomenon, our place on the earth may be determined from the variation alone of the angular distance between two heavenly bodies whose motion is known. But it is also evident that this angular distance must vary by the motion of one or both of the bodies with so much rapidity as to present very considerable variations in 24 hours. The moon alone affords us these advantages; as its motion in its orbit is at the rate of nearly 13° a-day, a change of a single minute of a degree in its position, corresponds to a little less than two minutes of a time, or 30′ of a degree in longitude. Now, by help of the accurate instruments at present in use, we can, by taking the angular distance of the moon from a star, or from the sun, ascertain with great precision the position of that body, and consequently can determine the hour, within a few seconds, under a given meridian, at the moment of observation. This is the method employed for determining the longitude at sea.

To lunar observations, however, it is necessary to join the use of *chronometers*, or *time-keepers*, which serve in the intervals during which observations of the distance of the moon from the sun, or from a star, cannot be obtained. These instruments would alone accomplish the end proposed, if it were possible to construct them with such accuracy, that when once regulated to mean time under a given meridian, their motion would remain exactly the same during the whole continuance of the voyage, for they would then at all times point out the hour under that meridian.

To all these methods of determining geographical positions, furnished by the observation and calculation of the celestial motions, is now added the use of signals made by gunpowder. In a very elevated place, during a serene night, a quantity of powder is from time to time inflamed in the open air; two observers, each provided with a clock, and stationed at the places of which the difference of longitude is required, mark with care the appearance of the flashes — an appearance which, notwithstanding the distances, is instantaneous for the two places, in consequence of the prodigious velocity of light. The difference of the times indicated by the two clocks will give the difference of longitude sought.

§ 2. *Of the Dimensions and Figure of the Earth.*

The active curiosity of man, not satisfied with having demonstrated that the earth is a globe revolving in space, instigated him to ascertain the exact dimensions of the planet which had been assigned to him as his abode. An arc of the celestial meridian being measured, it was natural to conclude, that as this arc ought to correspond to a similar meridional arc on the surface of the earth, it would be necessary only to measure this latter curve, in order to find the dimensions of the entire circle, and consequently of the circumference of the globe.

In the century before the Christian era, Posidonius, who lived at Rhodes, erroneously supposing that the cities of Alexandria and Rhodes had the same longitude, measured the arc between these two places, as an arc of the terrestrial meridian. If we except this error, the method of Posidonius was the true one. Erastosthenes made use of a *gnomon* placed vertically in the centre of a concave sphere; he knew that at Syene the sun, at the time of the solstice, projected no shadow; he remarked that at Alexandria, the gnomon, at the same instant, projected its shadow over the fiftieth part of a circle; hence he concluded the latitude of Alexandria to be 7° 12′ north of Syene, which must have been situated under the tropic. But according to the moderns, the latitude of Syene is 24° 5′, consequently that of Alexandria would be 31° 17′, which is not far from the truth. But however accurately this observation might be made, it could not furnish the Greek astronomer with a solid basis for the measurement of the earth, as the two points which he compared are not situated exactly under the same meridian.

The measures of a degree attributed to the Arabians exhibit in like manner only equivocal results, and such as cannot be reconciled with the truth but by means of arbitrary assumptions.

After the revival of letters, the European astronomers made many fruitless attempts to measure accurately an arc of the meridian. Fernel, in the year 1530, measured a degree between Paris and Amiens, and, notwithstanding the imperfection of his instruments, found it to be 57,070 toises, a result almost identical with that obtained by modern geometers. In 1617, Snell, after having determined the celestial arcs comprised between Alkmaer, Leyden, and Bergen-op-Zoom, by the difference of the altitudes of the pole in those three places, calculated the terrestrial distances of the three parallels on the meridian, by means of a series of triangles connected together, and proceeding from a base which was ascertained by actual measurement on the ground; he thus found that the length of a degree of the meridian was 55,021 toises, or 58,639 English fathoms of six feet each. Norwood, an English astronomer, in 1635, measured, by a very imperfect method, the arc of the meridian between London and York. He found the degree to be 57,310 toises, or 61,078 fathoms, which result is a very near approximation. About fifteen years afterwards, Riccioli, a celebrated Italian astronomer, pretended to have found, by a measurement carried on in the environs of Bologna, that a degree of the meridian was 62,900 toises, or 67,036 fathoms; but this result is almost 6000 toises, or 6395 fathoms above the real value.

It was by applying the telescope to instruments used in the measurement of angles, that Picard was enabled to undertake with the necessary precision, the new measure of a degree which he commenced in 1669. He chose for the theatre of his operations the space contained between Sourdon in Picardy, and Malvoisine, on the borders of

Gâtinais and Hurepoix. In order to ascertain the itinerary distance which separates those two places, which are situated under the same meridian, he connected them by a series of triangles, and observed successively all the angles of each triangle, which furnished him with a means of verification for each, as the sum of the angles of every triangle is equal to 180°. He scarcely ever obtained this sum; but the inevitable errors only amounted to a few seconds.

A triangle is indeterminate if only the angles are given, for then we can obtain no more than the ratio of the sides; but one side, together with the angles, being known, the other parts are easily found. Picard therefore measured, with a precision till then unattempted, a distance of 5663 toises, or 6035 fathoms, on the road from Villejuif to Juvisy. With this base he calculated the side of one of his triangles; and from this he found the side of a second; and thus he proceeded from triangle to triangle, as far as Sourdon. Here again a straight line was measured as a *base of verification*, and it differed only by one or two toises from the length computed from the first measure. New triangles were afterwards carried forward as far as the cathedral of Amiens, where the operation ended.

It was then necessary to find the length of the line which joins the extreme points, and its position with respect to the meridian of Paris, in order to ascertain the distance in the direction of this meridian; and also to determine accurately the length of the corresponding arc of the celestial meridian, that is, how many degrees and parts of a degree it contained, in order to deduce its ratio to the whole circumference.

In this second part of his operation, which depended on the observation of the stars, Picard selected a star near the zenith, in order to obviate the effects of refraction, which, in his time, produced much uncertainty. By this means he found the difference of latitude between Malvoisine and Sourdon to be 1° 11′ 57″; that it corresponded, in the direction of the meridian, to a distance of 58,430 toises, or 62,272 fathoms; and hence he concluded the length of the degree to be 57,064 toises, or 60,816 fathoms.

He found also, between the cathedral of Amiens and Malvoisine, a difference in latitude of 1° 22′ 55″; and a distance of 78,850 toises, or 85,034 fathoms, which gave for the degree 57,057 toises, or 60,808 fathoms; he chose the mean of both these results, *viz.* 57,060 toises, or 60,812 fathoms; whence the whole circumference contains 21,892,320 fathoms, or about 24,880 English miles.

The accuracy of Picard's operation seemed to remove all doubt respecting the dimensions of the earth, when the important experiments made by M. Richer at Cayenne in 1672, showed that the figure of the earth was not perfectly spherical, and that consequently the degrees were not equal. His pendulum clock, regulated at Paris to the mean motion of the sun, after being transported to the island of Cayenne, which is only about 5 degrees from the equator, was found to lose every day 2 minutes, 28 seconds. The length of a pendulum, which at Cayenne beat seconds exactly, being marked upon an iron bar, which was brought to France, it was observed that the seconds pendulum of Cayenne was a line and a quarter shorter than that of Paris, which measured 440.57 lines, or 39.156 English inches.

This experiment proved that the force of gravity is less at Cayenne than at Paris; for when the pendulum is drawn aside from the vertical position, the force which causes it to return is gravity; and the interval of time it takes to return to that situation is shorter, if the power of gravity increases, and longer if it diminishes. Hence, since the pendulum oscillates more slowly at Cayenne than at Paris, or beats a less number of seconds in the course of a day, it is clear that the force of gravity is less at the former place than at the latter.

This experiment perfectly coincided with the reasoning of mathematicians, who began to consider the earth as depressed towards the poles: and the cause of the augmentation of gravity, or the attracting force, was explained by the depression of the surface, which therefore approaches nearer to the centre.

Huyghens, a Dutch mathematician, even before the experiment of the pendulum was known, considering that bodies which revolve round a centre, or an axis, acquire a *centrifugal force*, which tends constantly to make them fly off from this centre or axis, as we observe in a stone whirled about in a sling, concluded that the fluid diffused over a considerable part of the surface of the earth could not assume a form perfectly spherical, as it must be affected at the same time both by the centrifugal force and by the force of gravity impelling it towards the centre. He supposed, therefore, that the earth must be depressed towards the poles, and that the axis of rotation is shorter than the equatorial diameters by $\frac{1}{578}$, which is equal to about fourteen miles. Newton, to whose profound sagacity we owe the discovery of the principle of universal gravitation, considered gravity at the surface of the earth not as a constant

force everywhere directed towards the centre of our globe, but as the result of the mutual attractions of all the particles of the earth to each other; and found that this force varies a little in intensity and direction, when the earth is regarded as not being perfectly spherical. If the figure of the earth depends upon gravity, gravity itself is also modified by the figure of the earth; whence, the earth having once assumed the oblate figure, this figure alone, independently of the centrifugal force, ought to render gravity weaker under the equator than under the poles. Newton, proceeding on this principle, and supposing the earth homogeneous in all its parts, found, for the quantity of depression, $\frac{1}{230}$, or about 35 miles.

Those conclusions, differing as to the quantity of the result, but agreeing with respect to the alteration which the figure of the earth ought to undergo in consequence of the centrifugal force, have been developed by the most delicate and profound calculations. It has been demonstrated, that the earth cannot be a homogeneous mass, but that its density ought to increase in descending to the centre; and that, in all cases, an elliptical figure satisfies the laws of the equilibrium of fluids.

At the present time, the theory of the diminution of gravity towards the equator has been confirmed by a great number of observations on the pendulum, from Lapland to the Cape of Good Hope; and from their general agreement it has been concluded, that the depression of the globe is equal to very nearly the 290th part of its axis.

The depression of the earth is also verified by measures taken on the terrestrial globe; for it results from this theory, that the degrees of latitude cannot be equal throughout the whole extent of the meridian, but that they ought to be augmented in the flattened part of the meridian, that is, towards the poles, and diminished in the most convex part of the same meridian, or near the equator. These consequences, which follow from the fundamental notions of elementary geometry, were however for some time mistaken by men of very great merit, such as Cassini, and D'Anville, who affirmed that the earth was elongated towards the poles: in other words, that the terrestial spheroid revolved about its greater axis; a supposition entirely incompatible with the theory of gravitation and the equilibrium of fluids.

In France, the notion prevailed for forty years, that the earth is a spheriod protracted towards the poles. At length, the Academy of Sciences resolved to ascertain by actual experiment the truth of the theoretical conclusions on the subject, and selected from their own body two companies of mathematicians, who were dispatched, the one in 1736 to Peru, and the other in 1737 to the polar circle, to measure a degree of the meridian in the regions bordering on the equator and near the pole. The results thus obtained, compared with each other, and with the degree measured in France by Picard, though they did not entirely agree with respect to the quantity of the depression of the earth at the poles, completely dissipated all doubts of the fact. The degree measured at the polar circle exceeded that of the equator by 669 toises, or 703 fathoms; and the degree measured in France, though smaller than that of the polar circle, still surpassed that of the equator by 307 toises, or 327 fathoms.

Astronomers and mathematicians still continued to doubt respecting the true dimensions and ellipticity of the earth, when a political project afforded an opportunity for undertaking a new measure of the arc of the meridian which traverses France. The National Convention had ordered that a uniform and permanent system of weights and measures should be established. The philosophers proposed to found the basis of this system upon nature, and to *take as the primitive unity of measure*, or the *metre*, the *ten millioneth part of the quadrant of the terrestrial meridian*, that is, of the distance between the equator and the pole. It was said that a metrology founded on such a basis would belong to every age and nation; and it was therefore determined that the new metrological system should be rendered more authentic, by founding it upon new operations, conducted with a precision till then unknown, and directed by the most able astronomers. Delambre and Mechain were appointed to measure the arc of the meridian intercepted between the parallels of Barcelona and Dunkirk. These two celebrated geometricians measured the angles of 90 triangles with repeating circles constructed on the principle of Borda; they observed with these instruments, five latitudes at Dunkirk, Paris, Evaux, Carcassone, and Barcelona. The two *bases* near Melun and Perpignan were measured with platina and copper rules, and were found to agree, to a few inches, with the measures calculated. Minute attention prevented or rectified the smallest errors. The most eminent of the French mathematicians, together with a number of others sent from different countries, verified and sanctioned all the calculations. No doubt, therefore, can be entertained respecting the accuracy of the results of this vast enterprise, which commenced in 1792, and terminated, as far as regards the measurement, in 1798.

It has been proved, that the degrees of the meridian diminish towards the south, and increase towards the north. But this augmentation of the terrestial degrees does not follow a regular and constant progression. Therefore no meridian whatever can be a regular ellipse. It is probable that the earth itself is not a *solid of revolution*, that is, a figure circumscribed by the revolution of the same ellipse round its axis. However, these irregularities, which appear extremely small in comparison with the mass of the earth, may, without inconvenience, be overlooked.

The meridian of France, which MM. Biot and Arago have lately prolonged, by a very tedious operation, as far as the isles of Iviza and Formentera, considered separately, gives for the quantity of the depression $\frac{1}{156}$, and, by comparing it with the degree of Peru, it would give $\frac{1}{334}$.

This latter result, adopted by the French commissioners of weights and measures, coincides with what was found by observations of the pendulum. It agrees also with several celestial phenomena occasioned by the non-sphericity of the earth; for this planet being swelled out towards the equator, the attraction of the sun and moon is there more powerful than towards the poles; and, as the plane of the equator is inclined to the ecliptic and lunar orbit, the additional attraction communicates to the axis both a progressive motion, which causes the equinoctional points to retrograde, and an alternate motion, by which it oscillates around the position it would have by virtue of the first motion. The first of these motions is called the *precession of the equinoxes*, and the last the *nutation of the axis*. M. Burg having calculated the causes of those perturbations, and the influence of the earth's depression, found the latter to be $\frac{1}{334}$.

The degree measured at the polar circle by the French academicians in 1737, was that which differed the most from the general result deduced from all the other data. Accordingly the measurement of a new degree, at the same place, was undertaken by M. Svanberg, a Swedish astronomer. The French academicians had measured only an arc of 57′, but M. Svanberg extended the operation to 1° 37′. By the definite result of this measure, a degree of the meridian at that latitude was found to be 196 toises shorter than that which was measured in 1737.

Even the planets, which are many millions of leagues distant from us, have contributed to fix our ideas respecting the oblate figure of the terrestial spheroid. The alteration of the spherical figure, resulting from the rotation of a celestial body on its own axis, appears also in the planet Jupiter, where it is so sensible that the difference of the two diameters of the disc may be discerned by means of a telescope. This difference is almost one-tenth; and when we compare the exact measure of this depression, the dimensions of Jupiter, and the time of his rotation with those of the earth, we find for this latter planet a flatness proportioned to $\frac{1}{13}$; which does not differ very widely from the result of the French measure.

We may now consider the quantity of the earth's depression as sufficiently determined for geographical purposes. There are few geographers indeed, who, in the construction of maps on a small scale, have paid attention to the depression or ellipticity of the earth. Maupertuis, Murdoch, and others, have indeed calculated tables, which give the increase of the degrees of longitude on an elliptic spheroid. But the depression of the earth, reduced to the $\frac{1}{300}$ of the equatorial diameter, not producing between that diameter and the axis which passes through the poles more than a difference of about 26 miles, would give for a spheroid, the major axis of which would be 3 feet, a difference of only about one-eighth of an inch, a quantity which it would be extremely difficult to observe with precision in the construction of globes. They may therefore be made perfectly spherical. In topography and special hydrography the effect of ellipticity is perceptible not only in the degrees of latitude, but also in those of longitude; and it is the duty of a careful geographer to attend to it, by following the methods which several late works have given for expressing those differences.

We shall now terminate this short historical account of the investigations relative to the figure of the earth, by placing before the reader the results deduced from twenty of the principal and most accurate measurements of arcs of the terrestial meridian that have been made in various parts of the world.

Dimensions and Ellipticity of the Earth.[*]

	English Feet.		*Miles.*
Equatorial Diameter	= 41,843,330	=	7924.873
Polar Diameter	= 41,704,788	=	7898.634
Difference of Diameters, or Polar Compression	= 138,542	=	26.239
Ratio of Diameters	= 302.026 : 301.026		
Ellipticity $\frac{1}{301.026}$			
Circumference of the Equator		=	24897.

[*] Encyc. Brit. Article, *Figure of the Earth.*

From these elements the following table is computed, showing the length of a degree of the meridian, and of a degree of longitude, at every tenth degree of latitude:—

Lat.	*Degree of Meridian.*		*Degree of Latitude.*	
	Eng. Feet.	Miles.	Eng. Feet.	Miles.
0°	362,734	68.70	365,152	69.16
10	362,843	68.72	359,640	68.11
20	363,158	68.78	343,263	65.01
30	363,641	68.87	316,493	59.94
40	364,233	68.98	280,106	53.05
50	364,862	69.10	235,171	44.54
60	365,454	69.21	183,029	34.67
70	365,937	69.31	125,254	23.72
80	366,252	69.36	63,612	12.05
90	366,361	69.39	0	0

§ 3. *Of Globes and Maps.*

To fix well in the mind the various parts of knowledge which constitute the science of geography, it is necessary to have before our eyes a representation of the earth and its different parts, on a small scale. The simplest of these representations is the *artificial terrestrial globe;* which shews as nearly as possible the earth in relief, with its seas, continents, and islands; also its mountains, rivers, and principal towns. All these are placed in their *true position* on the artificial globe; they are represented in their totality, and relatively to each other, as they are situated on the earth itself, according to astronomical observations and geodesical measurements. A geographical map can only give perspective views of a part of the globe, in which there are always more or less of conventional errors.

The artificial globe affords a representation of those mathematical circles which serve to give us an idea of the various relations of the earth with the heavenly bodies, and of terrestrial places with each other. Thus, the terrestrial equator, the tropics, the polar circles, are represented on the surface of the globe; then, the other parallels to the equator, from 5 to 5, or from 10 to 10 degrees, according to the size of the globe. The meridians are also described from 5 to 5 or from 10 to 10 degrees; and are numbered at their point of intersection with the equator. The parallels to the equator are sometimes numbered at the points where they intersect the conventional first meridian. The ecliptic is also represented on good globes.

The poles are the extremities of the axis about which the globe turns. These two pivots are fixed to a metallic circle which surrounds the globe from one pole to the other, so that on turning the globe, every terrestrial point passes under this circle. It serves, therefore, as a *general meridian*, and is so called. The degrees of latitude, and on large globes, even the minutes and seconds, are marked on the general meridian.

The bearers, or feet of the whole machine, support a circular band of metal or wood, which divides the globe, in whatever position it may be placed, into two hemispheres, one superior, the other inferior, and thus represents the *rational horizon*. This artificial horizon has several circles traced on its surface, on which are marked the degrees of the twelve signs of the zodiac, the names of those signs, the days of the month, and the thirty-two points of the compass.

The quadrant of altitude is a thin plate of brass, attached to the general meridian, and divided into 90 degrees, which serves, instead of compasses, to measure the distances, and determine the positions of places. The *horary circle* is fixed on the north pole; it is divided into 24 hours, and bears a moveable index, which turns round the axis of the globe. There is also at the foot of the globe a *mariner's compass*, which should be fixed in the parallel and the meridian of the horizon.

The globe serves, generally speaking, to illustrate the elements of mathematical geography. In order to shew its use, we shall now explain its construction. The most simple and most exact way of constructing a globe is to describe on its surface, by the means we are about to explain, the circles, lines, and points, which it ought to represent.

Let us suppose that two points, diametrically opposite, have been assumed to represent the poles, and fix the position of the axis of rotation: taking one of these points for a centre, at an equal distance from each, a circle must be described, which will be the equator; another great circle is drawn through the poles to represent the *first meridian*, which will be divided into 90 degrees, counting from the equator towards each pole: afterwards, setting out from this meridian, the circumference of the equator must be divided from degree to degree. These two circles being determined,

it is easy to mark on the globe any place of which the latitude and longitude may be ascertained from geographical tables; for it will be sufficient to mark the latitude on the first meridian, and through the point where it falls, to describe (the pole being taken for the centre) the circle parallel to the equator; then drawing a semicircle through the point of the equator on which the longitude falls and the two poles, we shall have the meridian whose intersection with the parallel already described marks the position of the place.

It is thus that the *circles of latitude* and *longitude* are traced on the globe, at the distance of ten or of five degrees from each other.

The *circles of latitude* are parallel to the equator; they therefore necessarily diminish till the last circle of latitude is identified with the pole itself. The *circles of longitude*, or the *meridians*, extend from pole to pole, cutting the equator perpendicularly, and are all equal to each other. The degrees of latitude are counted only on the circles of longitude, and *vice versâ*. The *degrees of latitude* are, therefore, small arcs of $\frac{1}{359}$ of a *circle of longitude*, intercepted by two *circles of latitude*. They would of course all be equal were it not for the small difference which proceeds from the depression, and makes them increase a little towards the poles. The *degrees of longitude* are arcs of $\frac{1}{359}$ of a *circle of latitude*, intercepted by two *circles of longitude*. Therefore the degrees of longitude go on diminishing in proportion as the circles of longitude come near each other; and at the point where all these circles, till then convergent, cut each other, that is to say, at the pole, there is no longer any difference of longitude.

The latitudes are reckoned from the equator. This origin is naturally determined by the circumstances of the earth's motion. It is otherwise with the longitude; for all the meridians being great circles, nature furnishes no reason for choosing one in preference to another, as a term from which to begin to count, or as *first meridian*. We need not be surprised, therefore, that geographers have varied much in their choice of this element.

Ptolemy fixed his first meridian at the Fortunate Isles, (now the Canaries), because they formed the most western limit of the countries known in his time; and as their extent from east to west was more considerable than from south to north, the former direction received the name of *longitude*, or length, the latter that of *latitude*, or breadth, terms which now bear a general application. This first meridian of the ancients is not known with certainty.

In order to render the manner of expressing longitudes in French geography uniform, Louis XIII., by an express declaration, ordered that the first meridian should be placed in the *Isle of Ferro*, the most western of the Canaries. Delisle, one of the first who endeavoured to give precision to geographical determinations, fixed the longitude of Paris 20 degrees east of that meridian. When it was known by more rigorous observations, that the difference of longitude between Paris and the principal town of the Isle of Ferro, was 20° 5′ 50″, it was necessary to advance the first meridian 5′ 50″ to the east of that point, so that it is now merely a conventional circle which passes through no remarkable point.

The Dutch had fixed their first meridian at the Peak of Teneriffe, a mountain situated in the island of that name, and then esteemed the highest in the world.

Gerard Mercator, a famous geographer of the 16th century, chose the meridian which passes through the island *Del Corvo*, one of the Azores, because in his time it was the line on which the magnetic needle suffered no deviation. It must be confessed, that this line forms the most natural and the most commodious point of departure with respect to maps of the world.

Some writers on geography understand by the term meridian of a place, only the half of the great circle corresponding with the celestial meridian; the other half, which is in the opposite hemisphere, with respect to the poles, is by them called the *anti-meridian*.

Geographers now begin to count the longitudes from the eastern side of the first meridian, and to reckon them in the same direction round the whole circumference of the equator, till they return to the western side of the meridian. In this way of counting, the longitudes increase to 360°.

These conventional arrangements have not been adopted by mariners. Astronomical observations having become of general use in navigation, and the tables which indicate the instant of the celestial phenomena, and the position of the heavenly bodies at different epochs, being always computed for the meridian of the principal observatory of each nation, navigators found it more convenient to refer to this meridian the points of the routes they followed. French mariners count from the meridian of

the observatory of Paris; the English from Greenwich; the Spaniards from Cadiz. Let us observe, moreover, that mariners estimate the longitude from the difference of the time which elapses between the passage of the meridians under the same heavenly body, or from the difference of hours counted at the same moment in two different places. If the mariner has advanced towards the east, the hour of the day, at the same instant of time, is later than under the meridian from which he set out; the contrary happens when he proceeds westward. It is necessary, therefore, when we convert a difference of time into a difference of longitude, to indicate whether the longitude is *east* or *west*. In this way of reckoning, the longitude is always counted on the side nearest the first meridian, so that it only embraces the semi-circumference: and the globe is divided into two hemispheres with respect to the first meridian; in the hemisphere situated to the west, the longitudes are said to be *west:* and in the other *east*. All *marine charts* are constructed according to this mode of reckoning.

In conformity with the ancient custom of geographers, we shall here point out the means of resolving various elementary questions by means of the artificial globe. It is proper, however, to apprize our readers that exact solutions of these problems can only be obtained by calculation. The greater part of the questions usually proposed as exercises on the globes, are either of a vague and frivolous nature, or so little connected with geography, as not to merit any particular notice.

The first use that is made of the globe is to determine the distance of one place from another. The shortest distance between two points on the sphere is measured by the arc of the great circle which joins them; and as all great circles are equal, the degrees of any one of them are exactly of the same length as those of the equator or meridian. We therefore measure with compasses the arc comprised between the proposed points, and carry it to the meridian or the equator, which are graduated; or we may stretch the quadrant of altitude between the two places, and observe the number of intercepted degrees. These converted into itinerary measures will give the distance required.

If, for example, the arc comprised between two places marked on the globe, and brought to the meridian, contains 10° 45′, we shall have the shortest distance between these points in miles, by converting the degrees and minutes into miles, reckoning 69½, or in round numbers 70 miles, to a degree. The result will be 716¾ miles.

If the places whose distance we wish to ascertain are situated under the same meridian, it is only necessary to take the difference of their latitudes, and to convert it into itinerary measures. A difference of a few minutes in longitude has no sensible effect on the result.

It would be a great error to take the *difference of longitude in degrees*, of two places, situated on the same parallel, for the *measure of their distance;* this can only be done when the places are situated on the equator, which is a great circle; but the parallels being small circles, the radii of which diminish as we approach the poles, it follows from the principle stated above, that the absolute length of their arcs does not give the true measure of the shortest distance from the extremities of those arcs: this distance can only be measured by a great circle passing through the two extreme points. For as the radius of the parallel is shorter than that of the great circle, the arc of the parallel must necessarily have a greater curvature than that of the great circle comprised between the same points, and is consequently longer. The following is a striking example: Petersburg is almost under the same latitude as the Isle of Kodiak, in Russian America; the difference of longitude is about 180°, equivalent under this parallel to 6360 miles; but the shortest distance between the two places, counted on a meridian that is almost common to them, is 60 degrees of latitude, equivalent to 4240 miles. It is true, that to pass from the one place to the other in the direction of the meridian, it would be required to cross the polar ice.

It is necessary, however, in many cases, to measure the distance on the parallels, and, consequently, to know exactly the value of the degrees of longitude marked on the parallel circles. The globe renders the diminution of these degrees towards the poles sensible to the eye; our table indicates it in detail: but we should know the mathematical principles on which it depends. The length of the degrees marked on the parallels is proportional to the radii of those circles; but the radii of the equator, and of its parallels, are perpendiculars let fall from the different points of the meridian on the axis of the sphere, as the lines E C and H R, on the second figure on page 33. Consequently, if we take the radius E C for the length of the degree of the equator, and if we divide it into sixty-nine parts, each representing a mile, the number of these parts which the radius H R of the parallel L M may contain, will indicate the value of the degree of this parallel in miles. Hence it results, that, to determine the length

of the degrees on each parallel, we have only to describe on a line EC, which represents the length of the degree of the meridian, or of the equator, a quarter of a circle EP; divide it into degrees, and let perpendiculars fall from each point of division on the radius CP; these lines will mark the respective lengths of the degree of the parallel for each latitude.

To find the latitude of any place on the earth, the globe must be turned round on its immoveable axis till the place comes under the fixed meridian; and the degree marked on the fixed meridian over the place will give the latitude. The longitude of the same place will then be found on the equator, at the point where this circle passes under the meridian. If we wish, on the contrary, to determine the position of a place, the longitude and latitude of which are known, we have only to bring the point of the equator which corresponds to the given longitude, to the fixed meridian, and, taking the given latitude on the meridian, we shall have the geographical position of the place.

The hour circle which is commonly adapted to the north pole of the globe, serves to indicate the hour in one part of the earth, when we know the hour it is in another; for, by placing the latter place under the meridian, after having fixed the index of the dial at the given hour, and by making the globe turn till the fixed meridian is over the place of which the hour is required, the index will show on the dial the hour wanted: it is later if the globe has been turned to the east, and earlier if it has been turned to the west.

If we wish to know the length of the longest day for all the points of a hemisphere, the northern, for example, we must place the meridian, so that the arctic polar circle touches the horizon of the globe: this horizon will then be identical with the circle of illumination. If we bring any point whatever of the proposed hemisphere to the meridian, and then fix the index of the polar dial at 12, and make the globe turn towards the east till the point marked enters into the horizon, the index will stop at the hour at which this point passes from the enlightened to the obscure part. The number of hours gone over on the dial will be the half of the duration of the day required. By bringing the pole nearer the horizon, we shall give the horizon the position which the circle of illumination occupies before and after the solstices, and we shall find, as above, the length of the day in each country at any time of the year. In this position of the globe, all the points which are at the same time on the western border of the horizon, are those at which the sun is seen to rise at the same moment that it is seen to set at those on the eastern border.

It is by studying the globe attentively that we come to understand perfectly the import of the terms *north* and *south*, *east* and *west*. Two terrestrial points, situated under the same meridian, are directly north and south of each other, and all the intermediate points, that is to say, all the points of the line of distance, are equally north and south of each other, and all reciprocally on the same point of the compass. In like manner, any two points whatever, taken under the terrestrial equator, are directly east and west of each other; and all the intermediate points are equally so, and are reciprocally on the same point of the compass.

If we take two places, which are neither under the same meridian, nor under the equator, whatever their relative position may be otherwise, none of the intermediate places will, with respect to the others, be on the same point of the compass. For the arc of a great circle which measures the distances, is an arc of a vertical circle which passes through the zenith of the two places in question; but every vertical circle, which is itself neither a meridian, nor perpendicular to the terrestrial meridian (like the equator), will cut all the intermediate meridians under angles unequal to each other. But it is these angles of position which determine the point of the compass on which one place is relatively to another. Therefore, as all the intermediate places between the two places in question will offer angles of position unequal in degrees, each of them will be on another point, with regard to the following place, from what the preceding place was with regard to it. Thus, in following the shortest route between two places situated out of the equator, and under different meridians, the point of the compass varies at every step.

The directions of the winds, or *points of the compass* with respect to the meridional line, and the names assigned to them, are generally marked on the horizon. By this means we may ascertain the position of a place with respect to the sun, at the moment when it appears to rise or set, by observing on what point of the horizon the given place passes from the obscure to the enlightened part, or from this into the other. The globe, thus turned, affords the means of representing physically all the phenomena of the annual motion of the earth.

The following table exhibits the *thirty-two points* of the *Mariner's Compass*:—

Situation upon the Compass.	*English Names.*	*French Names.*	*Italian Names.*	*Ancient Names.**
Degrees.				
0	NORTH (N.)	NORD (N.)	TRAMONTANA.	Boreas; Aparctias; Septentrion.
11¼	N. by E.	N. ¼ N. E.	¼ di T. Verso Greco.	
22½	N. N. E.	N. N. E.	Greco-Tramontana.	
33¾	N. E. by N.	N. E. ¼ N.	¼ di Greco-Verso T.	
45	*North-East* (N. E.)	N. E.	*Greco.*	Cæsias; Aquilo; (*sometimes* Boreas)
56¼	N. E. by E.	N. E. ¼ E.	¼ di Gr.-Verso Levante.	
67½	E. N. E.	E. N. E.	Greco-Levante.	
78¾	E. by N.	E. ¼ N. E.	¼ di Levante V. Greco.	
90	EAST (E.)	EST (E.)	LEVANTE.	Apeliotes; Subsolanus; (Eurus?)
101¼	E. by S.	E. ¼ S. E.	¼ di Lev. Verso Scirocco.	
112½	E. S. E.	E. S. E.	Levante-Scirocco.	
123¾	S. E. by E.	S. E. ¼ E.	¼ di Scirocco V. Levante.	
135	*South-East* (S. E.)	S. E.	*Scirocco.*	Euronotos; Vulturnus; (often Eurus.)
146¼	S E. by S.	S. E. ¼ S.	¼ di Scir. Verso Ostro.	
157½	S. S. E.	S. S. E.	Ostro-Scirocco.	
168¾	S. by E.	S. ¼ S. E.	¼ di Ostro. V. Scirocco.	
180	SOUTH (S.)	SUD (S.)	OSTRO.	Notos; Auster.
191¼	S. by W.	S. ¼ S. O.	¼ di Ostro V. Libeccio.	
202½	S. S. W.	S. S. O.	Ostro-Libeccio.	
213¾	S. W. by S.	S. O. ¼ S.	¼ di Libeccio V. Ostro.	
225	*South-West* (S. W.)	S. O.	*Libeccio.*	Libs; Africus.
236¼	S. W. by W.	S. O. ¼ O.	¼ di Lib. V. Ponente.	
247½	W. S. W.	O. S. O.	Ponente-Libeccio.	
258¾	W. by S.	O. ¼ S. O.	¼ di Ponente V. Libeccio.	
270	WEST (W.)	OUEST (W.)	PONENTE.	Zephyrus; Favonius.
281¼	W. by N.	O. ¼ N. O.	¼ di Ponente V. Maestro.	
292½	W. N. W.	O. N. O.	Maestro-Ponente.	
303¾	N. W. by W.	N. O. ¼ O.	¼ di Maestro. V. Ponente.	
315	*North-West* (N. W.)	N. O.	*Maestro.*	Corus; Skiron; Argestes.
326¼	N. W. by N.	N. O. ¼ N.	¼ di Maestro V. Tram.	
337½	N. N. W.	N. N. O.	Maestro-Tramontana.	
348¾	N. by W.	N. ¼ N. O.	¼ di Tram. V. Maestro.	
360	NORTH.	NORD.	TRAMONTANA.	Boreas; &c.

If we wish to know on what line one place is situated with respect to the meridian of another, we must first place the globe so that the second place may answer to the pole of the horizon, that is to say, we must *rectify* the globe for that place. This is done by taking its latitude, and elevating the nearest pole to a degree equal to this latitude. The horizon is then, with respect to the globe, in the position which the rational horizon of the place proposed occupies on the earth. The globe being thus rectified, the pivot of the quadrant of altitude is brought over the place in question, and its edge is afterwards made to pass by the first place. The number of degrees and parts of a degree on the horizon, are then counted from the quadrant of altitude to the meridian, either on the north or south side, and we have the measure of the angle formed with the meridian by the arc of the great circle which joins the two places proposed.

Large globes are costly and inconvenient instruments; small ones do not afford sufficient details; it becomes necessary, therefore, to have recourse to *maps*, which give a representation of the globe and its different parts on a plane surface. These representations embrace either the whole earth, or a part of the world, or a single country. In the first case they are called *maps of the world*, and when they have a circular form, *planispheres;* those of the second class are called *general maps;* the others are *special maps*. Among the special maps, some represent a province on a large scale, with all its remarkable places; these again are *chorographic maps*. If the designer has entered into all the details of the nature of the ground, and the direction of roads and rivers, they are *topographical maps*. Custom sometimes confounds these denominations. Geographical maps, properly so called, are also distinguished from those that are appropriated to a particular use; such are *hydrographic charts*, destined for mariners, *mineralogical maps*, and others.

The figure of the earth prevents the possibility of giving a general picture, in which the distances of places, and the relative extent of regions, are preserved in their mutual relations. The earth being a spheroid, its surface cannot coincide rigorously

* The names in this column form the ancient compass of *eight* points. The following intermediate points were recognised by the ancients in the compass containing *twelve* points: — 1. *Between North and East*, Meses, (often Boreas and Aquilo) 30°; Cæsias 60°. — 2. *Between East and South*, Eurus, Vulturnus, 120°; Phœnix, Euronotos 150°. — 3. *Between South and West*, Libonotus, Libophœnix 210°; Libs, Africus 240°. — *Between West and North*, Iapix, Corus, Argestes 300°; Thracias, Cercias 330°.

with a plane; and hence results the impossibility of marking on a map, at the same time, and in their natural relations, the extent of countries, the distances of places, and the similitude of configurations. Geographers are obliged to have recourse to various constructions, to represent, at least in an approximative manner, each of these relations in particular.

These constructions have received the name of *projections;* a name applied in general to drawings, the object of which is to indicate on a plane the dimensions of the sphere, and of the bodies on its surface. They are of two kinds; some are real *perspectives* of the globe, or of the parts of its surface, taken from *different points of view*, and on different planes; the others are only a kind of developments, restrained to approximative laws, and appropriated to the relations which it is wished to preserve in preference.

The projection of the sphere is commonly divided into *orthographic* and *stereographic.*

Orthographic projection is that in which the surface of the sphere is represented on a plane which cuts it through its centre, the eye being placed vertically at an infinite distance from the two hemispheres. The following are the principal laws of this projection:—1*st*, The rays of light proceeding from an infinite distance are parallel. 2*d*, A straight line, perpendicular to the plane of projection, is projected in a single point, which is that in which the line cuts the plane of projection. 3*d*, A straight line which is not perpendicular to the plane of projection, but parallel or oblique to it, is projected by a straight line terminated by perpendiculars drawn from its extremities to the plane of projection. 4*th*, The projection of the line is the greatest possible when it is parallel to the plane of projection. 5*th*, Hence it follows evidently that a straight line parallel to the plane of projection is projected by an equal straight line; but that, if it is oblique to the plane of projection, it is projected by a straight line less than itself. 6*th*, A plane surface, if it be perpendicular to the plane of projection, is projected simply by a straight line; and this straight line is the line in which the given surface intersects the plane of projection. 7*th*, It is hence evident, that the circle whose plane is perpendicular to the plane of projection, and which has its centre in that plane, ought to be projected by the diameter which is its common section with the plane of projection. 8*th*, It is also evident, that an arc of a circle, the extremity of which would answer perpendicularly to the centre of the plane of projection, ought to be projected by a straight line equal to the sine of that arc, and that its complement is projected by a line which is simply the versed sine of that arc. 9*th*, A circle, parallel to the plane of projection, is projected by a circle that is equal to it; and a circle oblique to the plane of projection is projected by an ellipsis.

Stereographic projection is that in which the surface of the sphere is represented on the plane of one of its great circles, the eye being supposed at the pole of that circle. In the stereographic projection, the globe is considered as a transparent solid. The hemisphere represented is that which is opposite to the hemisphere in which the eye is supposed to be. The following are the principal laws of stereographic projection:—1*st*, Every great circle, passing through the centre of the eye, is projected by a straight line. 2*d*, A circle placed perpendicularly opposite the eye, is projected by a circle. 3*d*, A circle placed obliquely with respect to the eye, is projected by another circle, the radius of which increases in the ratio of the obliquity. 4*th*, If a great circle is projected on the plane of another great circle, its centre will be on the line of the measures, that is to say, on the projection of the great circle, which passes through the eye, and which is perpendicular to the circle to be projected, and to the plane of projection. The distance of the centre of the projected circle from the centre of the primitive circle, or circle of projection, is equal to the tangent of its elevation above the primitive plane, or the plane of projection. 5*th*, A small circle will be projected into another circle, the diameter of which (if the circle to be projected surrounds the pole of the primitive circle) will be equal to the sum of the semi-tangents of the greatest and least distance from the pole of the primitive circle, these tangents being taken each in the line of the measures from the same side of the centre of the primitive circle. 6*th*, In the stereographic projection, the angles which the circles make on the surface of the sphere are equal to the angles which the lines of their respective projections make with each other on the plane of projection.

On these principles, methods have been found for tracing maps of the world according to either of the two projections.

Three sorts of stereographic projections are in common use: 1*st*, That on the plane of the equator, called *polar*, because the eye is supposed to be at one of the poles. 2*d*, That on the plane of a meridian, which divides the globe into two *hemispheres*,

one containing America, and the other Europe, Asia, and Africa. 3*d*, That on the plane of the horizon of any place whatever.

In the polar projection, supposing the eye at one of the poles, the plane of the picture will be that of the equator; the meridians will be projected by straight lines, and the circles parallel to the equator by concentric circles.

In the stereographic projection on a meridian, the point of view, always placed in the pole of the hemisphere opposite to that which is to be represented, is on the circumference of the equator; and the projection of this great circle is a straight line perpendicular to the axis of the poles of the earth.

The *horizontal stereographic projection*, is the most interesting application of this method. The rational horizon of any place whatever will serve as a plane of projection; the point of view is the lower pole of that horizon; the meridian that passes through that place is represented by a straight line, and is commonly called the *principal meridian*.

It is sufficient to cast one's eyes on a map of this kind, to perceive that the quadrilaterals comprehended between two meridians and two consecutive parallels, increase in extent in going from the centre to the circumference. This increase results from the oblique direction which the visual rays take, on diverging from an axis perpendicular to the picture, called the *optical axis* It follows, therefore, that the regions placed towards the borders of the hemisphere have a much more considerable extent than if they were at the centre,; and that we are led into error whenever we compare them with those which occupy that part. For example, when the horizon of Paris is taken as the plane of projection, the point of southern Africa appears much broader than on a globe; and in Nova Zembla, the distances, south and north, are represented by spaces much larger than the same distances are in India. This inconvenience, of no consequence to experienced geographers, may convey erroneous ideas to pupils; but the risk would be diminished, if, in teaching, care were taken to explain the properties of stereographic projections, and to place under the view of beginners the polar, equatorial, and horizontal planispheres, the defects of one always disappearing in another.

Besides the orthographic and stereographic projection, there is a third projection in perspective called the *central* projection. It is obtained by placing the point of view at the centre of the sphere, and taking for the plane of the picture a plane which is a tangent to its surface. It is plain that this projection, still more than the stereographic, alters the extent of regions, in proportion as they are removed from the centre of the map. It can never represent an entire hemisphere, because the visual rays, drawn from the circumference which terminates this hemisphere, are infinite, being parallel to the plane of the picture. It may, however, be employed with advantage to represent parts of the globe, the extent of which is not very considerable; for, in this projection, all the places situated on the same great circle, are placed on the map in a straight line; and it is susceptible of a scale, the construction of which is not difficult to find.

Such are the three principal projections of the globe which the rules of perspective admit. We see that none of the planispheres traced after these projections unites all the qualities of a perfect representation of the globe. They necessarily alter the figure of countries, either in the middle or towards the borders of each hemisphere. They do not represent spaces really equal under equal dimensions; and the same takes place for most of the distances. Nor is it possible to obtain, either in the stereographic or orthographic projection, that places situated in a straight line on the globe, that is to say, on the same great circle, should be also represented in the map of the world on a straight line. Finally, the necessary inequality in the projection of spaces does not allow us to find with ease the exact longitude and latitude of a place. Different means of modifying the stereographic projection have in vain been proposed, with a view to remedy these inconveniences.

Among all bodies which can be exactly represented on a plane, the cone and the cylinder are those which approach the nearest in character to the sphere. The cone especially offers this advantage, that a small conical zone hardly differs at all from a spherical zone: hence it is that conical developments afford the best projections of special geographical maps, and, by the help of some modifications, even for maps embracing considerable portions of the globe.

When we merely wish to trace a zone of very little extent in latitude, it is evident that the spherical zone may, without any sensible error, be represented by the development of a cylinder, either inscribed or circumscribed about that zone, and the axis of which coincides with that of the globe. These maps can only serve for very

small parts of the globe; the least defective are those which represent the regions near the equator, because, at a little distance from this circle, the cosines of the latitude do not vary much. D'Anville made use of them in a similar case, but such a case is of very rare occurrence.

Mercator, who had introduced the stereographic projection for maps of the world, considering that mariners do not employ maps to learn the figure of countries, but only to trace exactly, according to its length and direction, the course they have run, and to determine the distance they are from different points of the coasts, with the course they must hold to reach or avoid them, invented, in order to accomplish this object, in 1550, the projection of *reduced maps*, which perfectly satisfies these conditions, and of which Wright, Gregory, Halley, and others, discovered the mathematical theory long after. The meridians in these maps are parallel straight lines, equidistant from one another, and intersected at right angles by the parallels to the equator; but the intervals which separate the latter, increase as we advance towards the poles, in proportion as the degrees of longitude on the globe diminish. Hence it results, that the distances in longitude, measured on each parallel, have the same relation as on the globe, with respect to the distances in corresponding latitudes.

It is of some consequence to attend to the scale of *itinerary distances*, or distance according to the local measures of the country usually laid down upon some prominent part of the map. The principal lineal and itinerary measures made use of in different countries are, the *English* and the *French foot*, each of them divided into 12 inches; the *English yard* of 3 feet; the *English fathom* of 6 feet; the *French mètre*; the *French toise* or *fathom* of 6 French feet; the *English statute mile* of 1760 yards; the *English league* of 3 miles; the *English geographical mile*, 60 to a degree of the equator, which is equal to 69½ (69.1575) English statute miles; the *French mile* of 1000 toises; the old French *post league* equal to 2 French miles; the *French geographical league*, 25 to a degree of the equator; the *French nautical league*, 20 to a degree; the *Spanish league*, 16⅔ to a degree; the *Italian mile*, 43⅔ to a degree; the *German geographical mile*, 15 to a degree; the *German great mile*, 12 to a degree; the *Russian werste*, 6 of which are equal to a *Russian geographical mile*, about 17½ to a degree; the *Swedish mile*, 10⅔ to a degree; the *Danish mile*, 14⅔ to a degree; and the *Dutch mile*, 19 to a degree. Of the itinerary measures used by the ancients, the great *Alexandrian* or *Egyptian stadium* was equal to 243 English yards; the *Grecian Olympic stadium* to 203 1/6 English yards; and the *Hebrew mile* to 1275 English yards.

Foreign Measures reduced to English denominations.

	English Measures.
French foot	12.789 inches.
Mètre of France*	39.371 inches, or 3.281 feet.
Toise of France	2.13155 yards.
Post league of France	4263 yards, or 2.422 miles.
Geographical league of France	4868.6 yards, or 2.76 miles.
Nautical league of France	6085.8 yards, or 3.457 miles.
Spanish league	7421 yards, or 4.216 miles.
German geographical mile	8114 yards, or 4.61 miles.
Russian werste	1162 yards.
Swedish mile	11703 yards, or 6.649 miles.
Danish mile	8224 yards, or 4.67 miles.
Dutch mile	6406 yards, or 3.638 miles.
French geographical square league	7.65 English square miles.
German geographical square league	21.25 English square miles.

The mathematical elements of a map being determined, it still remains to introduce into it the historical, political, and physical details, of which its extent and object render it susceptible.

* The *foot* and *toise* belong to the old measures of France; the *mètre* is one of the terms of the new system of measures introduced into that country at the period of the Revolution. As these measures are mentioned in some geographical works, it has been thought proper to subjoin the following table of their equivalents in English inches:—

	English Inches.
Millimètre	0.03937
Centimètre	0.39371
Decimètre	3.93710
Mètre (Ten-millionth part of the quarter of the terrestrial meridian)	39.37100
Decamètre	393.71000
Hectomètre	3937.10000
Chiliomètre	39371.00000
Miriamètre	393710.000000

The miriamètre is equal to 6.2138 English miles. The square mètre is equal to 10.766 English square feet.

The objects of common geography require the employment of only a small number of signs, easily understood, and the sense of which was explained by the old geographers, in a legend placed on one of the sides of the map; a custom which ought to be resumed in elementary atlasses. These signs indicate the position of places, and are modified according to the importance of these places, and the rank which they occupy in civil, military, or ecclesiastical government. When we wish to measure distances on a map, we must remark the very small circle or cipher, which is either adjacent to, or inscribed in each of those signs, because it is the central point of this circle which fixes the *geographical position of the place*. A simple line shows the course of small *streams*, and the two banks are indicated separately only when the dimensions of the bed of a *river* can be appreciated by the scale of the map. The *sea shores* are indicated by a very clean line, bordered with hatchings. In geographical maps, these hatchings, exterior with respect to the land, may be conceived to represent the undulations of the sea on the coasts; while, in marine maps, the hatchings, done on the land, exhibit the acclivity of the coast. *Navigable canals* are represented by straight lines joined angularly, which distinguish them sufficiently from natural streams of water, indicated by undulating lines, and from *railways*, marked by lines of short strokes drawn at right angles to the direction of the road. *Common roads* are often marked by two fine parallel strokes, sometimes by simple lines, continuous or punctuated; the latter, however, are most commonly reserved for marking the *limits of states and their provinces*, for which purpose the size and form of the points are varied; and to exhibit in a more striking manner those political divisions, which so often form an absurd contrast with natural limits, the monotony of the engraving is usually relieved by varied colours.

The physical part of a map requires attention to be paid to certain other circumstances. It is desirable to know if a country is covered with plains, or is mountainous, naked or wooded, dry or marshy. Certain conventional signs are usually employed for this purpose; thus the parts more or less strongly shaded, represent slopes more or less steep, on which the light is the more lost in proportion as they approach the vertical position. Geographical maps are less calculated to admit of this improvement, especially with regard to mountains; for the scale of those maps is necessarily too small to admit of expressing on them, in just proportions, the innumerable inequalities of ground, from the highest chains of mountains, to hills of the lowest order. Indeed it is impossible, by any device whatever, to represent, on a single map, all the physical features and superficial inequalities of a country of considerable extent. For a small region, a model may be employed with advantage.

§ 4. *Of the Calendar.*

It may now be proper to give an explanation of the *calendar*, which is a table of the days of the year, arranged so as to assist in the distribution of time, and to point out remarkable days connected with devotion or business. It derives its name from the Latin word *Calend*, the name which the Romans gave to the first day in every month, and which signified *called*, because on those days the people were called together by the pontiffs to apprise them of the days of festival that fell within the month. The divisions of time as marked in the calendar are those of *years*, *months*, *weeks*, and *days*.

The year is the period of time which the earth employs in describing its orbit round the sun. As the earth performs this revolution in 365 days 5 hours 49 minutes, or a solar year, it is evident, that at the end of 4 years, each of them supposed to consist of 365 days only, the earth will not have finished its fourth revolution by 24 hours nearly. In order to complete the revolution, every fourth year is reckoned to consist of 366 days, and is named *bis-sextile*, from the circumstance, that at the time of the first correction of the calendar, the 24th of February, or *sixth* of the calends of March, according to the Romans, was doubled. The year of 366 days is called in English *leap-year*. In adding, however, an entire day or 24 hours, called *intercalary*, to the fourth year, the true time of the earth's revolution is exceeded by 11 minutes for each year, or nearly three quarters of an hour for the whole period of 4 years. This excess, in the lapse of 400 years, amounts to 3 days, and is corrected by reckoning the last years of three centuries consecutively as common years, and the last year of the century following as *bis-sextile*. The rule of intercalation stands thus: *Every year of which the number is divisible by four without a remainder, is a leap year, except the centurial years, which are only leap years when divisible by four, after suppressing the two zeros or cyphers.* Thus 1600 was a leap year, but 1700, 1800, and 1900, are common years; 2000 will be a leap year; and so on.

The year, as consisting of 365 or 366 days, called the *civil year*, corresponds with the *Julian year*, which was invented by Julius Cæsar, for the purpose of remedying the defects which in his time existed in the calendar. At the commencement of the use of the Julian year, no account was taken of the excess of 11 minutes every year; and from this omission, the error in the course of fifteen centuries amounted to 10 entire days. To remedy this inconvenience, Gregory XIII. the reigning Pope, ordered 10 days to be at once struck out of the year 1582, and the day following the fourth October of that year was called the fifteenth. He farther contrived the omission of the three intercalary days in 400 years. This new form of the year is called the *Gregorian* or *new style*, in opposition to the former mode of computation, now termed the *old style*. The new style was introduced into England in 1752, and took effect on the day following the second of September, which was accounted the fourteenth, 11 days being thus omitted. At the same time, another important alteration took place: the year, which had hitherto been reckoned to commence on the 25th March, was held to commence, as at present, on the 1st January. The new style prevails throughout Europe, with the exception of Russia, where the old style is still retained.

The year is divided into 12 *months*, consisting of unequal numbers of days. There are three months in each season of the year; but in the calendar the seasons differ, in the dates of their commencement and termination from the astronomical seasons, described in our 34th and 35th pages. The spring months are February, March, and April: the first consists of 28, or, in leap years, 29 days; the second of 31 days, and the last of 30 days. The summer months are, May, 31 days; June, 30 days; July, 31 days. Autumn contains, August, 31 days; September, 30 days; October, 31 days; and the winter season, which includes the last two months of one year, and the month commencing the year following, has November, 30 days; December, 31 days; and January, 31 days.

The division of the year into months is derived from the revolutions of the moon round the earth. The interval that elapses between two successive conjunctions of the sun and moon, or, in other words, between the period of the new moon and its return, is called a *lunation*, the mean length of which is 29 days 12 hours 44 minutes. If the duration of the solar year were equal to that of 12 of these lunations, each month would have the same number of days. This, however, is not the case. The moon, in some years, makes 12 lunations, in others 13; and 19 years must elapse before the conjunctions and other phases return in the same order, and on the same days as formerly. This period of years, which is termed a *lunar cycle*, was registered by the Greeks in letters of gold. The year immediately before the one that commenced the Christian æra, was the first of the cycle; the following year was the second, and so on. From this it may easily be seen, that, in order to find the place in the cycle which any year holds, or its *golden number*, as it is usually called, it is only necessary to add one to the year, and divide by 19; the remainder will be the golden number. Where there is no remainder, the golden number of that year is 19. In this way, if 1838 be divided by 19, the remainder will be 14, which is the golden number for the year 1837; and the new moons throughout this year will be found to happen on the same days as in every other 14th year of the lunar cycle.

The *epact* is the moon's age on the 1st January of any year. Since the duration of the solar year exceeds the length of 12 lunations by nearly 11 days, if the epact of the first year of the lunar cycle be 0, that of the second year will be 11, the third year 22, and the fourth year 33, or rather 3, cutting off 30 days for the additional lunation that the moon has made during the previous three years. On this principle, it is easy to construct a table of the epacts for every year in the lunar cycle, by adding 11 to the epact of the preceding year, and retrenching 30 every time the epact exceeds that number.*

Golden Numbers.	Epacts.	Golden Numbers.	Epacts.	Golden Numbers.	Epacts.
1	0	8	17	15	4
2	11	9	28	16	15
3	22	10	9	17	20
4	3	11	20	18	7
5	14	12	1	19	18
6	25	13	12	1	0
7	6	14	23		

* If the moon's motion were equable in every part of her orbit, it would be an easy matter, from a knowledge of the epact, to calculate the true times of the new and full moons throughout the year. The moon's motion, however, is often accelerated or retarded by the varying attractions of the sun and earth, according to the situation which she occupies in her own orbit, and that of the earth in the ecliptic. These variations are termed *solar* and *lunar anomalies*; and in order to ascertain the true

There is yet another periodical division of time, that of *weeks*. The week is composed of 7 *days*, the Latin names of which are derived from those of the planets. The names of the days in Latin and English are —

Dies Solis.....Sunday.
Dies Lunæ.....Monday.
Dies Martis.....Tuesday.
Dies Mercurii.....Wednesday.
Dies Jovis.....Thursday.
Dies Veneris.....Friday.
Dies Saturni.....Saturday.

The English names, Tuesday, Wednesday, Thursday, and Friday, are of Saxon origin, the days themselves being formerly dedicated to Tiu, Woden, Thor, and Friga, the chief deities of the Pagan Saxons.

Sometimes in calendars, instead of the days of the week, the seven letters A B C D E F G are used. These letters are placed over against the respective days of the month. If the year begin upon a Wednesday, all the Wednesdays throughout the year are designated by the letter A, Thursdays by B, Fridays by C, Saturdays by D, and Sundays by E; the letter which marks the Sundays is called the *dominical* or *Sunday letter*. The dominical letter falls back one place in each of the three common years, because the year has a day more than 52 weeks; and two places in bis-sextile years, which have two dominical letters, the first answering for the months of January and February, and the second for the succeeding months of the year. The 28th and 29th of February have but one dominical letter.

The *civil day* commences at 12 o'clock at midnight, and lasts till the same hour of the following night. Twelve hours are counted from midnight till noon, and twelve from noon to midnight. In this it differs from the *astronomical day*, which is reckoned from noon to noon, the hours in the interval being counted up to twenty-four. In France, and most of the other States of Europe, the hours are reckoned in the same way as in Britain; but in several parts of Italy and Germany, the day is held to commence about sun-set, and the hours are counted on till next sun-set.

In every country where the forms of the episcopal churches are observed, the principal ecclesiastical festival is that of *Easter*. It is one of the feasts called *moveable*, and on the date of its celebration depends the dates of the principal church fasts and festivals throughout the year, with the exception of Christmas, which is always held on the 25th of December. Easter day has been fixed for the *first Sunday after the full moon that happens next after the day of the spring equinox:* consequently it can never happen sooner than the 22d of March, nor later than the 25th of April, dates called *Easter limits*. The principal church feasts depending on Easter, and the times of their celebration, are as follows: —

Septuagesima Sunday, Ash Wednesday..... } is { 9 weeks, 46 days } before Easter.

Rogation Sunday....., Ascension Day or Holy Thursday, Pentecost or Whitsunday....., Trinity Sunday..... } is { 5 weeks, 40 days, 7 weeks, 8 weeks } after Easter.

In most European countries, there are certain days, the periodical returns of which are fixed for the arrangement of business: these are called *terms*, or, as they are generally four in number, *quarter-days*. The English terms are: —

Lady-day.....25th March. *Michaelmas*.....29th September.
Midsummer...24th June. *Christmas*.....25th December.

The terms kept by the English courts of law and universities are regulated by the church festivals. *Hiliary Term* is held between the commencement of the year and Easter; *Easter Term*, immediately after Easter-day; *Trinity Term*, after Whitsunday; and *Michaelmas Term*, betwixt Michaelmas and Christmas.

In Scotland, the Terms observed are —

Candlemas.....2d February. *Lammas*..... ...1st August.
Whitsunday.....15th May. *Martinmas*.....11th November.

We shall conclude this chapter with a tabular view of the principal elements of the *solar system*, taken chiefly from Baily's Astronomical Tables, Lond. 1827.

time of the new or full moon, the equations arising out of the anomalies have sometimes to be added, at other times subtracted from mean solar time, as marked by the synodical month of 29 days 12 hours 44 minutes, which is the mean or average length of all the lunations contained in a solar cycle.

TABLE OF THE PRINCIPAL ELEMENTS OF THE SOLAR SYSTEM.

CENTRAL LUMINARY, AND PRIMARY PLANETS.

NAME.	Symbol.	DISTANCE FROM SUN. Mean Distance, or Semi-axis.	DISTANCE FROM SUN. Distance in English miles.	Eccentricity, in Parts of the Semi-axis.	PROPORTIONS. Volume—that of the Earth being Unity.	PROPORTIONS. Mass—that of the Earth being Unity.	Equatorial Diameter—that of the Earth being Unity.	Inclination to the Ecliptic.	Mean Sidereal Revolution, in Mean Solar Days.	Rotation, or Sidereal Day.
Sun	☉	. . . . .	. . . . .	. . . . .	1395324.4000	329630.0000	111.454	. . . . .	. . . . .	25d 10h 0m 0s ?
Planets—										
Mercury	☿	0.3870981	36,791,000	0.2055149	. . 0.0565	. 0.1627	0.398	7° 0′ 9″.1	87.9692580	0 24 5 28
Venus	♀	0.7233316	68,748,000	0.0068607	. . 0.8828	. 0.9243	0.975	3 23 28 .5	224.7007869	0 23 21 0
Earth	⊕	1.0000000	95,044,000	0.0167836	. . 1.0000	. 1.0000	1.000	. . . .	365.2563612	0 23 51 4
Mars	♂	1.5236923	144,818,000	0.0933070	. . 0.1386	. 0.1294	0.517	1 51 6 .2	686.9796458	0 24 39 21
Vesta	⚶	2.3678700	225,052,000	0.0891300	. . . . .	. . . .	. .	7 8 9 .0	1325.7431006	Not known.
Juno	⚵	2.6690090	253,667,000	0.2578480	. . . . .	. . . .	. .	13 4 9 .7	1592.6608000	
Ceres	⚳	2.7672450	263,011,000	0.0784390	. . . . .	. . . .	. .	10 37 26 .2	1681.3931000	
Pallas	⚴	2.7728860	263,547,000	0.2416480	. . . . .	. . . .	. .	34 34 55 .0	1686.5388000	
Jupiter	♃	5.2027760	494,494,000	0.0481621	. 1280.9000	. 308.9400	10.860	1 18 51 .3	4332.5848212	0 9 56 0
Saturn	♄	9.5387861	906,607,000	0.0561505	. 974.7800	. 93.2710	9.987	2 29 35 .7	10759.2198174	0 10 16 0
Uranus	♅	19.1823900	1,823,178,000	0.0466794	. 81.2600	. 16.9000	4.332	0 46 28 .4	30686.8208296	

SATELLITES.

NAME.	DISTANCE FROM PRIMARY. Mean Distance, in Equatorial Radii of the Primary.	DISTANCE FROM PRIMARY. Eccentricity.	Mass—that of the Primary being Unity.	Diameter, in Miles.	Inclination of Orbit to that of the Primary	Sidereal Revolution.
Earth's Satellite, the Moon, [☽]	59.98217500 (about 237,000 miles)	0.0548442	0.0125172	2160	. . . 5° 8′ 47″.9 . . .	27d 7h 43m 11s.5
Jupiter's Satellites—						
1st	. . . . 6.04853	Insensible.	0.0000173	2508	. . . 3 5 30 0 . . .	1 18 28 0.0
2d	. . . . 9.62347	Insensible.	0.0000232	2068	. . . Variable. . .	3 13 14 0.0
3d	. . . . 15.35024	Small and variable.	0.0000885	3377	. . . Variable. . .	7 3 43 0.0
4th	. . . . 26.99835	Small and variable.	0.0000427	2890	. . . 2 58 48 .0 . . .	16 16 32 0.0
Saturn's Satellites—						
1st	. . . . 3.35100	. . . . .	. . . . .	. . .	. . . . .	0 22 38 0.0
2d	. . . . 4.30000	. . . . .	. . . . .	. . .	Orbits of the six interior	1 8 53 0.0
3d	. . . . 5.28400	Orbits nearly	. . . . .	. . .	very nearly in the plane of	1 21 18 0.0
4th	. . . . 6.81900	circular.	. . . . .	. . .	the Ring; that of the 7th	2 17 45 0.0
5th	. . . . 9.52400	. . . .	. . . . .	. . .	Satellite nearer to coinci-	4 12 25 0.0
6th	. . . . 22.08100	. . . . .	. . . . .	. . .	dence with the Ecliptic.	15 22 41 0.0
7th	. . . . 64.35900	. . . . .	. . . . .	. . .	. . . . .	79 7 55 0.0
Satellites of Uranus—						
1st?	. . . . 13.12000	. . . .	. . . . .	. . .	. . . . .	5 21 25 0.0
2d	. . . . 17.02300	Orbits nearly	. . . . .	. . .	Inclined about 78° 58′ to	8 16 56 5.0
3d?	. . . . 19.84500	Orbits nearly	. . . . .	. . .	the Ecliptic. Motion of	10 23 4 0.0
4th	. . . . [illegible]	Orbits nearly	. . . . .	. . .	[illegible]	[illegible]

THE MEASURE OF EACH DEGREE OF THREE DIFFERENT DENOMINATIONS, IN EACH PARALLEL OF LATITUDE, FROM THE EQUATOR TO EITHER POLE, IN ENGLISH FATHOMS.

By Lieutenant-Colonel W. Lambton. — Compression = $\frac{1}{304}$.

Paral. of Lat.	*Meridional in Fathoms.*	*Perpendicular in Fathoms.*	*Longitudinal in Fathoms.*	*Paral. of Lat.*	*Meridional in Fathoms.*	*Perpendicular in Fathoms.*	*Longitudinal in Fathoms.*	*Paral. of Lat.*	*Meridional in Fathoms.*	*Perpendicular in Fathoms.*	*Longitudinal in Fathoms.*
0°	60458 . 64	60857 . 05	60857 . 05	30°	60607 . 4	60906 . 9	52746 . 9	60°	60906 . 7	61007 . 0	30503 . 5
1	60458 . 8	60857 . 1	60847 . 8	31	60616 . 5	60910 . 0	52210 . 0	61	60915 . 7	61010 . 0	29578 . 2
2	60459 . 8	60857 . 3	60820 . 2	32	60625 . 8	60913 . 1	51657 . 2	62	60924 . 5	61012 . 9	28643 . 8
3	60460 . 3	60857 . 6	60774 . 2	33	60635 . 2	60916 . 2	51088 . 6	63	60933 . 1	61015 . 8	27700 . 6
4	60461 . 5	60858 . 0	60709 . 8	34	60644 . 8	60919 . 4	50504 . 5	64	60941 . 4	61018 . 6	26748 . 8
5	60463 . 2	60858 . 6	60627 . 0	35	60654 . 5	60922 . 7	49904 . 9	65	60949 . 6	61021 . 3	25788 . 7
6	60465 . 1	60859 . 2	60525 . 8	36	60664 . 4	60926 . 0	49290 . 2	66	60957 . 5	61024 . 0	24820 . 7
7	60467 . 5	60860 . 0	60406 . 4	37	60674 . 3	60929 . 3	48660 . 3	67	60965 . 3	61026 . 6	23845 . 0
8	60470 . 1	60860 . 9	60268 . 6	38	60684 . 4	60932 . 7	48015 . 6	68	60972 . 7	61029 . 0	22861 . 9
9	60473 . 2	60861 . 9	60112 . 6	39	60694 . 6	60936 . 1	47355 . 2	69	60979 . 8	61031 . 4	21871 . 7
10	60476 . 5	60863 . 0	59938 . 4	40	60704 . 8	60939 . 5	46682 . 4	70	60986 . 7	61033 . 7	20874 . 8
11	60480 . 3	60864 . 3	59746 . 1	41	60715 . 1	60943 . 0	45994 . 2	71	60993 . 4	61035 . 9	19871 . 4
12	60484 . 3	60865 . 7	59535 . 6	42	60725 . 4	60946 . 4	45292 . 0	72	60999 . 7	61038 . 0	18861 . 8
13	60488 . 7	60867 . 1	59307 . 1	43	60735 . 8	60949 . 9	44576 . 0	73	61005 . 7	61040 . 1	17846 . 4
14	60493 . 4	60868 . 7	59060 . 6	44	60746 . 3	60953 . 4	43846 . 2	74	61011 . 5	61042 . 0	16825 . 4
15	60498 . 4	60870 . 4	58796 . 3	45	60756 . 7	60956 . 9	43103 . 0	75	61016 . 8	61043 . 8	15799 . 3
16	60503 . 8	60872 . 2	58514 . 1	46	60767 . 2	60960 . 4	42346 . 6	76	61022 . 0	61045 . 5	14768 . 2
17	60509 . 4	60874 . 1	58214 . 2	47	60777 . 6	60963 . 9	41577 . 3	77	61026 . 7	61047 . 1	13732 . 6
18	60515 . 4	60876 . 1	57896 . 6	48	60788 . 0	60967 . 4	40795 . 1	78	61031 . 2	61048 . 5	12692 . 7
19	60521 . 6	60878 . 2	57561 . 4	49	60798 . 4	60970 . 8	40000 . 5	79	61035 . 3	61049 . 9	11648 . 9
20	60528 . 2	60880 . 4	57208 . 8	50	60808 . 7	60974 . 3	39193 . 5	80	61039 . 1	61051 . 2	10601 . 4
21	60535 . 0	60882 . 7	56838 . 9	51	60819 . 0	60977 . 7	38374 . 5	81	61042 . 5	61052 . 3	9550 . 7
22	60542 . 0	60885 . 0	56451 . 6	52	60829 . 2	60981 . 1	37543 . 7	82	61045 . 6	61053 . 4	8497 . 0
23	60549 . 4	60887 . 5	56047 . 2	53	60839 . 3	60984 . 5	36701 . 4	83	61048 . 3	61054 . 3	7440 . 6
24	60557 . 0	60890 . 0	55625 . 8	54	60849 . 3	60987 . 9	35847 . 8	84	61050 . 7	61055 . 1	6382 . 0
25	60564 . 8	60892 . 7	55187 . 5	55	60859 . 3	60991 . 2	34983 . 1	85	61052 . 7	61055 . 7	5321 . 4
26	60572 . 9	60895 . 4	54732 . 4	56	60869 . 0	60994 . 4	34107 . 6	86	61054 . 3	61056 . 3	4259 . 1
27	60581 . 2	60898 . 2	54260 . 6	57	60878 . 7	60997 . 6	33221 . 7	87	61055 . 6	61056 . 7	3196 . 5
28	60589 . 7	60901 . 0	53772 . 4	58	60888 . 2	61000 . 8	32325 . 5	88	61056 . 5	61057 . 0	2130 . 9
29	60598 . 4	60903 . 0	53267 . 8	59	60897 . 5	61004 . 0	31419 . 4	89	61057 . 1	61057 . 2	1065 . 6
30	60607 . 4	60906 . 9	52746 . 9	60	60906 . 6	61007 . 0	30503 . 5	90	61057 . 25	61057 . 25	0000 . 0

CHAPTER III.

PHYSICAL GEOGRAPHY, IN RELATION TO THE INORGANIC PART OF THE GLOBE.

THE physical characteristics of our planet, which comprehend the most difficult, and unquestionably the most interesting of all the phenomena to which geography refers — must be studied under two grand and well discriminated divisions, to be treated under the present and following chapters. *The first division relates to the* INORGANIC *matter of the globe; and the second, to its* ORGANIZED *or living families.*

The full investigation of these two heads of inquiry constitutes the subject-matter and aim of many distinct sciences or branches of science; but in this place, it is necessary to refer *only to the more general laws or relations by which those sciences seem to be connected with the* ENTIRE EARTH. The line of demarcation, however, between that part of any subject which rightly falls to be treated as physical geography, and that which is more properly left to be wrought up into a separate science, is not a clear or distinct one; and its waving course generally varies with the discretion or caprice of the inquirer.

In the study of the *inorganic* matter of the globe, to which the present chapter refers, we have also certain obvious fundamental divisions, which every clear description must follow: and others are suggested by a practical knowledge of the kind of treatment proper for the subject. The following are the heads or divisions, which, without farther preliminary, we mean at some length to discuss: —

I. The Phenomena of the Land.

II. The Phenomena of Ocean, Rivers, &c.; and the relations of the Aqueous with the Solid portion of the Globe.

III. The Constitution and motions of the Atmosphere; Physical Climate; and Meteorological Phenomena.

§ 1. *The Phenomena of the Land.*

A GLANCE over any globe or map of the world shows, that the LAND is distributed in larger and smaller portions amid a vast expanse of ocean. The smaller portions are named *Islands;* while the larger divisions are termed *Continents.* Frequently one portion of land is almost detached from the rest, being only joined with it by a very narrow neck, termed an *Isthmus*, and the portion nearly detached, if comparatively small, is named a *Peninsula*, or almost-island. When the land juts into the sea, and breaks the line of coast by the extrusion of a sharp point, the point, or extremity of the part which juts out, is called a *Cape*, or *Promontory*.—The land may be considered under two points of view, viz. its *geographical distribution*, and its *profiles.*

1. One half of the earth is almost entirely covered with water, while the other half contains much less water than land. To exhibit this, adjust an ordinary geographical globe, so that New Zealand may occupy the highest or zenith point. The hemisphere above the horizon will present only a few islands, some promontories, and some narrow lines of coast, amid an immense sea; while the inferior hemisphere is for the most part land. Naturalists, at one time, fancied the necessity of a great southern continent, as a counterbalance to the mass of land situated in the other hemisphere; but the voyages of Cook put an end to such conjectures. Up to the 70th degree of south latitude, that enterprising navigator saw one vast ocean, interspersed with masses of floating ice, and a few trifling islands which had formerly been mistaken for promontories; so that there remains only a space of about five or six thousand square leagues in which there can be any land; and the whole of this mass would very little alter the proportion between the hemispheres. But, the truth is, the portion of the land now elevated above the level of the sea, is so small when compared with the convexity of the globe, that the existing inequalities in its distribution can produce no sensible effect upon the earth's equilibrium; and it is possible besides, that the sea towards the south pole may be less deep than in the northern hemisphere. This would be the case, were the measurements of La-Caille confirmed, by which he thought he had proved a greater flattening or depression of the terrestrial spheroid towards its southern extremity, inasmuch as the ocean, in virtue of the obvious tendency of water to establish a level,

would in that case spread itself over the surface of all the southern land. The following Table exhibits the proportion of known land to the entire area of different latitudinal *zones* of the earth's surface, together with the superficial extent of the land in each:—

LAND — *Northern Hemisphere.*			LAND — *Southern Hemisphere.*		
	Proportion.	*Surface in Square Miles.*		*Proportion.*	*Surface in Square Miles.*
Arctic Zone, . .	0.400	3,252,589	Antarctic Zone, .	0.000	
Temperate Zone,	0.559	28,531,631	Temperate Zone,	0.075	3,828,036
Torrid Zone, . .	0.297	11,628,440	Torrid Zone, . .	0.312	12,215,735
Total, . .	0.441	43,412,660	Total, . .	0.163	16,043,771

2. The land has two profiles, the *horizontal* and the *vertical.*

A. A few general remarks, which, in so far as we yet see, are quite unconnected, exhaust our knowledge of what is distinguishing in the *horizontal profile.* If the northern and southern hemispheres are contrasted in regard to the quantities of land they contain, the eastern and western present differences equally striking, in respect of the *shape* or *direction* of their continents. Divide the globe into two hemispheres, by lines passing through the poles, — one including Europe, Asia, and Africa, or the *Old Continent,* and the other, North and South America, or the *New Continent;* and it will be noticed, that while, in the former case, the land stretches out chiefly in the direction of the circles of latitude, so that its line of greatest length is nearly parallel to the equator, the direction of the Americas is perfectly opposite, or at right angles to this; the longest line stretching from pole towards pole. To this circumstance the difference of the climates of the two great continents may be chiefly attributed, but the difference is further increased in consequence of the New Continent approaching much nearer the north pole than the Old. The minuter features of the horizontal profiles, are in many respects no less contrasted. For instance, there is a much greater proportion of irregularities, or indentations, in the coasts, in the Old World, than in the New, — the former appearing open in almost every part to the advances of the sea, while one side of America presents no irregularity of consequence, except at California, and the other has also immense tracks perfectly unbroken. There seems but one characteristic in which in this point of view the opposite continents agree. The promontories or headlands in both, point to the south; and, with a few exceptions, this is the direction of all large peninsulas. South America, California, Alyaska, Greenland, Nova Scotia, Florida, Scandinavia, Italy, Greece, the Krimea, Arabia, India, Corea, Kamtshatka, and Africa, are instances of this. The same peculiarity prevails among the small peninsulas of some limited districts, such as the south coast of Greece, or the west coast of Scotland. Nothing is known which can account for a uniformity so unexpected and curious; but doubtless it is closely connected with the proximate causes of the existing distribution of land and water.

B. The *vertical profile* of the earth offers a great variety of aspects, and gives rise to much speculation. Even a first glance over any considerable territory, insular or continental, exhibits an exceedingly uneven and undulating surface, and convinces us that there is something singular and convulsive in this part of the earth's constitution.

a. The more uniform or unbroken parts of the landscape, even should their surface be slightly undulating, are named *plains;* and although, in general, systems of plains are of limited extent, being usually disturbed after short intervals by huge elevations, there are districts where the flat country stretches over a considerable space. Around the southern shores of the Baltic, and in the countries near the German Ocean to the north of the Rhine, we have an extensive system of plains. This is also the distinguishing feature of Russia, south of the Waldai; and it is even possible to draw a line from London to Moscow, which would not perceptibly vary from a dead level. Similar illustrations may be found in Africa, America, and New Holland—not connected with each other, however, by any common principle or law. From the low flats now spoken of, we must carefully distinguish *plateaus, table-lands,* or *upland plains,* which are extensive masses of land, raised far above the level of the sea; and which redescend to that level sometimes abruptly, and by rugged sides, and in other cases by long and gentle declivities. A plateau may have, and often has, upon its wide surface, mountains, plains, and valleys; and some of them are so flat, that the waters which fall upon them cannot escape to flow down their sides, so that these have also their systems of

rivers, lakes, and inland seas. Several instances of such masses exist in Europe, as in Croatia and Carniola; but they are of trifling dimensions, compared with the vast magnitude of similar formations in Tartary, Persia, among the Andes, and in Central Africa. We cannot connect known plateaus into any general or *terrestrial* system; but they form the most important features of separate districts and continents, appearing as their most ancient masses of land—the *nuclei* around whose sides the additional soil has through ages accumulated, and the continents grown into their existing form. On this ground the illustrious geographer *Ritter*, has recently conceived the plan of subdividing the surface of the earth, chiefly according to the elevated masses characterizing its different regions; with the description of which and their various declivities he unites views of the histories of the people inhabiting them; uniting together, so that they throw light on each other, their topographical, historical, and statistical relations. The novelty of the plan, and the immense erudition displayed in *Ritter's* work, place it among the small number of those, which constitute an epoch in the science of which they treat.

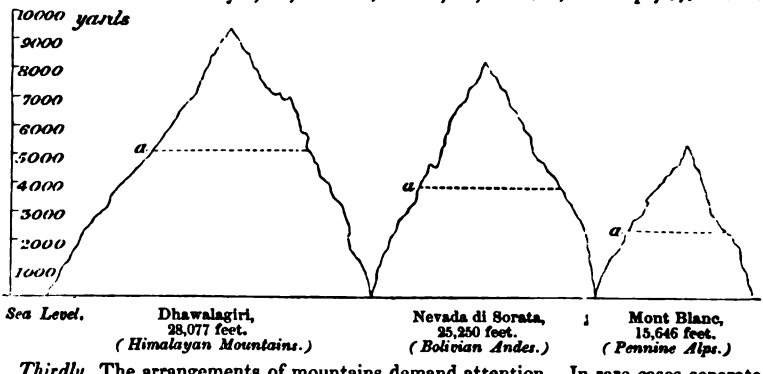
b. But the most remarkable features of the vertical profile of our planet are exhibited in the phenomenon of *mountains*. These large and abrupt elevations are scattered over all the surface of our globe; and, in every degree of development, they exhibit striking and picturesque varieties. The loftiest peaks generally consist of naked rock, the outline varying with the nature of the rock. At one time the mountain shoots up in the form of enormous crystals, whose sharp angles appear supported by each other; while in other instances, vast masses are crowned with rounded summits, rising into the air with quiet majesty. In some cases, too, the entire side of a mountain is one profound and abrupt steep, laying open, as it were, the hidden interior of the mass. These appearances are distinguished by the appellations,—*needles*, *peaks*, *teeth*, *horns*, *domes*, *breches* or *breaches*. Mountains of less elevation, or of the *second class*, are often equally picturesque. Chiefly constituted of strata or layers of rock variously inclined, but in all inclinations preserving a certain regularity, they seldom present those crystallized and needle-points; but sometimes we observe them rising around us by regular steps or gradations—a majestic amphitheatre; and in certain instances, the mass presents a surprisingly regular outline, like that truncated cone at the Cape of Good Hope, the *Table Mountain*, which appears like a gigantic altar. In some few cases, these mountains also exhibit fantastic outlines, but usually they are undulated and furrowed. Beneath mountains of the second rank, are *hills*, more or less lofty, of no great apparent elevation on any side, and with gentle declivities. Furrowed by streams of water, these often slope gradually away, and lose themselves in the plains; but sometimes their sides are precipitous, producing on a small scale the picturesque effect of higher elevations. The *pics*, or upper parts of mountains produced by volcanic agency, have an aspect peculiar to themselves. Their conical or pyramidal masses, rising like a cone or *sugar loaf*, are distinguished by regularity, even where they have been broken across by accidental causes. Basaltic mountains are also very striking. Their sides display ranges and piles of immense pillars, or causeways, which seem the production of giants.

It is difficult to fix on the *best* classification of the various phenomena connected with mountains. Perhaps, we may include the whole, by considering, *first*, those general appearances which arise from the mere fact of the existence of irregular masses, elevated above the general surface: *secondly*, the elevation or comparative altitudes of these masses; *thirdly*, their mode of arrangement: and *fourthly*, their sections, or internal constitution, along with the conclusions authorised by it.

First, then, it is clear that every mountain must have a *declivity*, or manner of descending to the plains. At least one general law is established on this subject; *every principal chain has one side very steep, and on the other a very gradual slope.* The Alps, for instance, are much more rapid in their descent on the Italian side, than on that of Switzerland; the Scadinavian masses are steepest towards the west and northwest; the Pyrenees towards the south; and so likewise are the Sierra-Morena, and the Alpuxarras; while the mountains of the Asturias are the reverse. Mount Atlas and Mount Libanus present their bold and craggy declivities towards the Mediterranean; and the two mountain chains that border the northern and the southern coasts of Asia-minor, present very abrupt faces towards the Black Sea and the Mediterranean, while their opposite, or inland sides merge more gently into high table-lands. Lastly, the Western Ghauts, on which the table-land of the Deccan rests, have precipitous declivities directly towards the west, and long and gentle slopes towards the east. These facts likewise show, that the attempts, not unfrequently made, to constitute a *terrestrial* system of abrupt sides, and opposite gentle

declivities, or to refer such contrasts to *universal*, instead of unknown *local* causes, are not supported by a minute review of the globe. When mountains lie together in groups, we have a special order of declivities, which have *acclivities* on both sides, and are termed *valleys*. These are *transverse* or *longitudinal*, according to their position in regard of the chains connecting them, — the former being at right angles to the principal chain, the latter in the same direction with it. The outlines of valleys are exceedingly various. Sometimes they have, on opposite sides, salient and re-entering points, so entirely corresponding, that one can scarcely help imagining that their sides, formerly united, have been torn asunder by some great convulsion; and in other cases, they are large, rounded, and gently swelling, as in Bohemia and Cashmere, seeming like the basins of ancient lakes, drained by the breaking down of a barrier. Valleys greatly vary in degree of acclivity; but the more remarkable phenomena connected with them appear when they are nearly closed up by transverse mountains, and have access to the larger world by only a narrow gorge, termed a *pass*, or *defile*. These secluded valleys often contained, in former times, independent nations, and the French still term such gorges "*Les portes des nations.*" The passes of Caucasus, the Caspian passes, those of Issus and Thermopylæ, and that of Skiœrdal, which unites Norway and Sweden, are of this class. But the grandest instances of such defiles are among the Andes, where cliffs rise above either side of the traveller four or five thousand feet.

Secondly, The absolute and relative heights of mountains is a point of great moment in physical geography; for elevation determines climate, and a single mountain side, therefore, exhibits the habitats of vegetables and animals as influenced by almost all the variations of climate incident to the globe. Great confusion unfortunately prevails in this portion of geography, partly because of the confused nomenclatures of observers, but chiefly because accurate measurements, trigonometrical or barometrical, have been taken only in Europe, in a small number of localities in Asia, and in a still smaller in America, Africa, and Oceanica. Tables of the heights of the leading ranges, as far as ascertained, will be found in the subsequent parts of this volume. The subjoined woodcut, however, will be interesting, as illustrative of the culminating points and relative heights of the chains of the Himalaya, the Andes, and the Alps. The dotted lines *a a a*, mark the mean heights of the chains, which may be stated in round numbers as follows: — Himalayas, 15,600 feet; Andes, 11,800 feet; and Alps, 7,700 feet.



Thirdly, The arrangements of mountains demand attention. In rare cases separate mountains are grouped together, forming a mere group of elevations, not externally connected; but in general, the bases of a series of neighbouring mountains *run into each other*, constituting a *chain*. We seldom find one solitary or single chain. In most groups or collections of mountains, numbers of chains are associated, sometimes in the manner of a central chain with secondary lines branching off from it; in other places, as a collection of chains, of which no one can be ranked as the principal; and in a few instances, (witness the Cordilleras of America) as long connected chains running parallel to each other for thousands of miles, in one constant direction. On no point in physical geography have more attempts been made to systematize too hastily than on this. It was conceived at one time, that the direction of the leading chain of mountains is always along the line of greatest length in the continent and district to which they belong, but this supposition does not accord with accurate knowledge of the facts. Attempts to frame from external aspects, extensive systems of chains, have also failed. The most

plausible of these attempts is unquestionably that which aimed at connecting into one chain, notwithstanding local irregularities, almost all the ranges of mountains in our planet. The map of Asia undoubtedly exhibits a close succession of greater or less altitudes, from Behring's Straits across the table-land of Mongolia, and, with some interruption, through Persia and Arabia, to the shores of the Red Sea. On the other coast of that sea, the mountains of Abyssinia appear to continue the series, which proceeds through the mountains of Lupata, or the back-bone of the world, to the Table Mountain at the Cape; while across Behring's Straits we find the beginning of that continuous chain of elevations which stretches to Cape Horn. Our planet is thus almost encircled by a vast ring or belt of mountains, which led Malte-Brun, in a moment of active fancy, to venture the idea, that the earth might at one time have been begirt by a ring like that of Saturn, and which, having fallen in, now survives only in its ruins!*

In now turning to consider the *composition or interior sections* of mountains, we are attracted by that remarkable class which appears to intimate something concerning the hidden interior of the earth, *volcanoes*. The general features of that most frightful and majestic of all phenomena, a volcanic eruption, are well known.. Violent movements, which often shake the earth to a considerable distance, prolonged moanings, or subterranean thunder, and the manifest agitation of the mountain, first announce the invisible war of the elements. The smoke issuing from the crater increases, thickens, and ascends as a black column. The summit of this column, yielding to its own weight, sinks down, becomes rounded, and appears, in awful picturesqueness, like the head of a pine tree, having the lower part for its trunk. At other times, the scene opens with more brilliancy. A stream of fire, piercing through a mass of clouds, is seen like a pillar of flame, resting upon the ground, and threatening to set the sky in a blaze. The environing smoke sometimes conceals it for a moment, and lightnings appear to flash from the midst of it. On a sudden, the brilliant cascade seems to fall back into the crater, and its fearful splendour is succeeded by darkness. Still the action continues within the abyss of the mountain: ashes, dross, and burning stones, are thrown out in diverging lines, like the sparks of fireworks — enormous fragments of rock are heaved against the skies, and torrents of water are often thrown out with impetuosity, and roll hissing over the heated rocks. This, however, is still only preliminary. A fluid burning mass now rises from the bottom of the crater, similar to metal when in fusion. This overflows, runs down the sides of the mountain, and descends to its base. There it sometimes stops, but generally it widens, and advances like an impetuous river, devastating whatever it meets with, and transforming in a moment miles of flourishing fields into a burning flame. Equal ravages may ensue, although the liquid matter, called *lava*, does not issue exactly from the top of the mountain. It is sometimes too weighty and compact to be elevated to the summit, in which case it occasions ruptures in the side of the mountain, through which the fiery torrent gushes forth.

The energy of this shattering volcanic force, however, is not to be measured by its mere superficial effects. It has been known to alter the entire profile of the district within which it acted. It has distorted plains, raised mountains where none stood before, and in some cases mountains have disappeared during its paroxysms and the action of the earthquakes† accompanying it. Mount Jorullo, in Mexico, was elevated in one night of fearful convulsion. We have many records of the rise of islands, or mountains thrown up by submarine volcanoes; and Sir T. S. Raffles has given us an account of the sudden disappearance or swallowing up of a large mountain in the island of Sumbawa. For a condensed view of every authenticated fact of this description, the reader is referred to Mr. Lyell's classical work on geology.

Not only is the volcanic power one of mighty energy, but it has also a wide diffusion, and is distinctly the exponent of some great physical law connected with the general structure of the earth. *Tierra del Fuego*, *Peru*, *Chili*, and *New Granada*, are filled with volcanoes. Beyond the isthmus of Panama, we find many burning summits among the mountains of *Nicaragua*, *Guatemala*, and especially of *Mexico;* nor is it

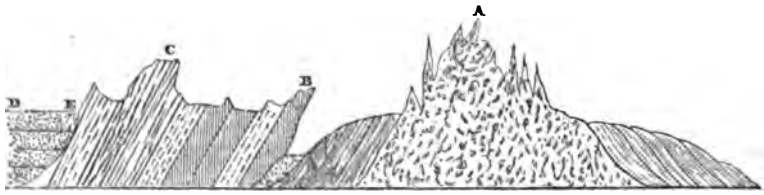
* It may be right to advert to another speculation concerning mountain-chains. Groups of islands like the Kuriles, the Aleutian, and the Great and Little Antilles, being manifestly the peaks of submarine groups; some generalizers have attempted to resolve all islands into such, and to trace through these few and far-between indications, the chains of mountains rising from the bottom of the sea. This is the object of the geographical theory of *Buache*, which, however visionary, has originated several works of high desert, which have facilitated and advanced the study of geography. Among these are the early publications of *Balbi*, and the *Introduction à la Geographie*, by *Lacroix*, where this geometrician has developed a mode of dividing the whole earth, according to the different *basins* which compose it.

† Earthquakes, in fact, are simply actions of the volcanic or convulsive energy, where it does not find a *vent*. Their effects are tremendous: sometimes overwhelming cities, opening ravines, closing up valleys, and breaking asunder the solid earth, so that the sea may come in and divide what formerly was united.

doubtful, after the statements of Cook, La Perouse, and Malespina, that there are likewise many on the *north-west coast* of *America*. Then come the volcanoes of *Alashka*, and the *Aleutian islands*, which are very numerous, and seem to point to *Kamtshatka*, where alone there are five, two of which are violent ones. Japan has at least ten, and the island of Formosa two or three. Passing farther south, the volcanic sphere widens, embracing the entire *Philippines*, the *Marian Isles*, the *Moluccas*, *Java*, *Sumatra*, *Queen Charlotte's Isles*, the *New Hebrides*, the *Friendly*, the *Society*, and the *Sandwich Isles*. The number of volcanoes in these islands it were tedious to enumerate. *Java* alone contains thirty-eight! In the Indian ocean we have the volcano of *Barren Island*—the volcano of the south island, or *Amsterdam*, in the group of St. Paul and Amsterdam, and the formidable one in the isle of *Bourbon*. In the middle of Asia, amid the deserts of Tartary, there are the mountains of *Tourfan* and *Bish-Balikh*. The *Cape Verd* islands contain the volcano of the island *Fogo*. Portuguese authors speak of others in *Guinea*, *Congo*, and *Monomotapa*. In Europe, a great volcanic line, or rather *zone*, traverses *Greece*, *Italy*, *Germany*, and *France*; although in the two latter countries its activity has long ceased. Many revolutions have been caused by such action in the Grecian Archipelago, and new islands have been produced by sub-marine explosions. Farther west, the summits of *Etna* rise into view, which have flowed for upwards of 3000 years, within the records of history. The *Lipari* islands are all volcanic, and probably owe their existence to this cause. *Vesuvius*, and the greater but extinct volcano near *Rocca Fina*, the *Solfatara*, the *Pontian* islands, the old volcanoes near *Padua*, *Verona*, and *Vicenza*; some others, also extinct, in *Dalmatia* and *Hungary*, *Kawberg* in *Bohemia*, *Transberg* near *Gottingen*, the *seven mountains of Bonn*, the celebrated district of *Auvergne* in central France, and the now equally silent peaks around *Olot* in Catalonia,—all these illustrate the extent of volcanic action. In the northern ocean, also, *Iceland* presents its *Hecla*, its *Kotlouguia*, and six other volcanoes, whose breathings agitate even the lowest depths of the ocean; and in the middle of the Atlantic, we have the *Azores* and *Canaries*, the peak of *Teneriffe* itself rising to an elevation of 12,000 feet. These guide us to the *Antilles*, which are almost all of volcanic constitution, and where there are still active mountains in *Saint Vincent*, *Saint Lucia*, and *Guadaloupe*.

We have thus under our view an agent of extensive operation and vast power, especially if it was the same that acted with still greater force in the prior ages of our planet, shattering its crust or surface, and uprearing masses of mountains. It remains to be seen whether the constitution, or sections of these mountains, will authorise such an explanation.

For the most part, the *nuclei* of great chains consist of rocks of chrystallized or massive structure, not formed of *layers*; and where the chief rocks of chains are *stratified*, they uniformly point to some central line or *axis*, where chrystalline rocks prevail, and toward which, the stratified masses incline or *dip* from opposite sides. A section will most briefly explain this: —



The mass or axis which the portion below A represents, is composed of chrystalline rocks; and the rocks around either side of that mass, when of abrupt and truncated form, at the points B and C, exhibit the possibility of secondary chains, or of chains turning towards the central axis; these are called stratified, or *sedimentary*, i. e. they have been deposited by water, according to a principle we shall explain afterwards, and laid down in a *horizontal position*. The phenomenon, then, receives its most probable solution in the hypothesis that the mass A, molten by fire, had been protruded through the horizontal rocks with a force which caused them to alter their original position, and assume their inclination, and that the protruding rocks, being molten or fused, had chrystallized in cooling. This explanation of the inequalities of the earth's crust is now universally adopted; and it is well borne out by the fact, that if we arrange in a regular series the *lavas* of volcanoes at present in a state of activity, the products of volcanoes now extinct, the trap rocks, which are lavas that seem to have cooled under great pressure, and those anciently chrystallised masses to which we

have adverted, it will be found that there cannot be detected any break in that series, as the modern lava seems to merge gradually into the older chrystallized formations.

Adopting this theory, it may he asked, — if these mountain masses were protruded by internal volcanic or other forceful agency, can we ascertain the *relative epochs of their protrusion*, speaking of epochs or periods of time, in this case, not in terms of solar or lunar years, but in that order of numbers in which we compute the distances of the fixed stars? A living and acute French geologist, *Elie de Beaumont*, first brought into full view the principles by which the relative ages of protrusions or disturbances can be estimated; and he has already made extensive researches with reference to the age of particular chains. If, as is undoubted, the stratified rocks were properly and originally horizontal, it is clear that all stratifications not horizontal have been disturbed or upheaved, while those remaining in a horizontal position give evidence that no disturbance or upheaving has occurred in their neighbourhood since the time of their deposition. In the previous wood-cut, for instance, the rocks at D, being horizontal, have not been disturbed, and must have been deposited *since* the central mass A protruded itself, and elevated the inclined masses B and C; so that the epoch of the protrusion of A is manifestly included between the period of the deposition of the last of the series of elevated rocks at E, and that of the deposition of the horizontal strata at D. Now, the several stratified formations may be taken as contemporaneous over a large extent of country; and a means is thus in our hands of judging when the different mountains were raised. De Beaumont has joined with this irrefragable theory an hypothesis by no means established, but not to be rejected or overlooked, as it rests on very plausible grounds. He supposes that lines of mountains *parallel to each other* were elevated during the same epoch. Further and minute observation alone can confirm or invalidate this. The following is De Beaumont's idea of the scale of the ages of our mountains, beginning with the oldest:—

1. The system of Westmoreland, and those of the Eifel, the Hundsruck, and Nassau, at the foot of which the carboniferous masses of Belgium and Sarrebruck were deposited.
2. The elevations of the Ballons in Vosges, and the Bocage in Calvados.
3. The mountains of the north of England.
4. The mountains of the Low Countries and South Wales.
5. The system on the Rhine.
6. The system of the south-west coast of Britanny, and of La Vendee, of Morvan, of the Böhmerwaldgebirge, and of the Thuringenwald.
7. The mountains of Pilas, and Côte d'Or, and of the Erzgebirge.
8. The system of Monte Viso.
9. The Pyreneo-Appenine system.
10. The mountains of Corsica and Sardinia.
11. The Western Alps.
12. The principal chain of the Alps.

When we touch upon the remote or internal *cause* of these great disturbances, we are still lost in speculation. Perhaps geologists err, some in imagining causes of too local or confined a nature, and others by rushing into theories respecting the *central heat*, &c., which known phenomena are not sufficiently large to authorize. It should be kept in mind by all, that the protruding or elevating power is not confined to our planet. Its effects are visible in the Moon, in Venus, and every other body with whose physical constitution we are acquainted. The phenomenon then is, in so far, an astronomical one. It is connected with the physical development and the history of every known orb in the heavens.—The names and positions of the volcanic rocks will be found in the Table at the close of next section, which presents a synoptical view of all the formations constituting the crust of the globe.

§ 2. *Phenomena of the Water which covers part of the Surface of the Globe, and its Action upon the Land.*

THIS section is naturally divided into the two parts indicated by its title, — the first, treating of the general phenomena of the ocean, rivers, &c.; and the second, of those changes which they occasion, or have occasioned, to the land with which they are connected.

I.—The phenomena of Hydrography are very various, but we shall probably exhaust them by considering — 1*st*, The physical and chemical peculiarities of the existing masses of water; 2*d*, The forms, mutual relations, and geographical distribution of its different parts; and 3*d*, The motion to which they are subject.

1. We find water in each of those three physical conditions which bodies can assume — *vaporous* in the atmosphere, *liquid* in the rivers and seas, and *solid*, as snow and ice. Its habitudes in the vaporous form will be detailed in a succeeding chapter. In its solid form it is very extensively known over the globe. The inhabitants of the temperate zones observe it frozen during their winter. In the circumpolar zones, where great cold always prevails, large masses of ice constitute a permanent feature in the landscape; and even in the torrid regions, the summits of the mountains often reach beyond the lower limit of perpetual snow, and are covered by a white crown. The limit referred to is caused by its elevation above the ground, and is higher or lower, according as the average temperature of the low lands is high or low. Within the tropics, for instance, water in its liquid form will exist at an elevation at which snow would prevail in the colder zones. In all countries, when the climate perceptibly varies with the seasons, there are thus necessarily two inferior limits of congelation—the lower one for winter, and the higher for summer; and the interval between them is the remarkable region of *glaciers*. In the hotter weather, the snows collected in the lower zone during winter are gently thawed, and when winter returns, refrozen into the consistency of ice, instead of flaky snow; and this alternation, proceeding through long ages, at length collects those large fields of ice, which, on breaking down through their own weight or accidental causes, often tear up the sides of the lower mountains, and devastate whole territories. The size of the glaciers varies with their locality. The Alps and the Pyrenees exhibit vast extents of such icy fields. Humboldt found few of them in America; but they exist in the mountains of Central Asia. Although the ravages occasioned by such masses are very great, they are yet by no means without their use; perhaps their action upon the whole is conservative and beneficial. The cold, which converts the greater quantity of water falling on a large tract of mountain into snow and ice, seals up a perpetual source of torrents, which in rainy seasons would destroy the countries in the neighbourhood. The glaciers hold this supply in suspension, acting as great fountains; it flows from them in summer, in free but gentle abundance; and in seasons of drought or violent heat, they augment the necessary and delicious supply.

The waters of the globe vary greatly in chemical character, or in composition. The general division is into fresh water, salt water, and mineral water.

The water of marshes, of lakes, and rivers, water found in pits, water resulting from the melting of snow, and spring water, for the most part, is all *fresh*, or somewhat similar to distilled water. There are also many subterranean reservoirs of fresh water, for otherwise we cannot account for the phenomena of springs and fountains. Such jets often rise from the bottom of the sea, in so great abundance that the saltness of the surrounding ocean is materially lessened by them. In the Gulf of Spezia, for instance, there is a powerful jet of this description rising in a liquid column. Similar fountains furnished the inhabitants of Aradus (near Baharein, in the Persian Gulf) with their ordinary drink; and on the south coast of Cuba, south-west of Barabano, and two or three nautical miles from the shore, fresh-water jets arise through the sea in such force that boats cannot approach them without hazard.

The great mass of the water, however, is *salt*. The entire ocean is so; and it is from it that, by a process of evaporation, we obtain the greater part of our common culinary salt. Physical inquirers have commonly considered the sea to be saltest under the equator; but Humboldt has recently deduced from good experiments the following results: —

Proportion of salt between	0°	and 14°	Lat.	= 0.0374
.....	15°	— 25°	—	= 0.0394
.....	30°	— 44°	—	= 0.0386
.....	50°	— 60°	—	= 0.0372

In general, the saltness of the sea diminishes near the mouths of rivers, and in the neighbourhood of the polar snows. It is also less in inland seas which receive many rivers, such as the Baltic and the Black Seas; and must likewise vary according to climate, storms, temperature, and the direction of currents, the time of tides, and after heavy rains. We have yet nothing beyond hypothesis in reference to the origin of this quality of sea water. We simply know the fact, that different salts are constituents of the terraqueous system, a large quantity of which has come into contact with the waters of the ocean, and been dissolved by them.

Water is found in many localities united with various other substances; in which case it generally receives the name of *mineral* water. *Sulphate of magnesia* is not an uncommon element; and it is this salt which constitutes the chief characteristic of the cele-

brated waters of Seidlitz and Epsom. The steppes of Siberia north-east of the Caspian contain such saline lakes, forming a sort of chain from the Kuma and lower Volga, as far as the Yenesei; and similar sheets abound among the plains of Hungary. *Sulphur* is also a frequent ingredient in some mineral waters; others hold in solution *arseniates* and *mercurial* salts, but these are chiefly buried in caverns. Water is also united with other metallic compounds; and being in other cases charged with extremely minute atoms of *silex*, which enter the pores of wood and other substances, and substitute, for the elements of the original bodies, firm chrystalline particles, it is said to *petrify* bodies thrown into it. This petrifying power is remarkable in *Lough Neagh* in Ireland. Such streams sometimes deposit their silex upon the floor of their beds, forming there a crust of solid silex, which in various instances has accumulated into a considerable rock. We remark, in conclusion, the existence of *inflammable* waters, or rather waters from whose surfaces flames dart out, although the liquid is not hot. Sometimes the pools referred to contain inflammable gases, disengaged from masses of iron, zinc, and tin, dissolved by sulphuric and muriatic acids, such as the fountains of Poretta Nuova, or the brook near Bergerac, which may be kindled by a lighted straw; at other times, they are mixed with bitumens, especially naphtha and petroleum, which float upon their surface, and burn there — for instance the water of Baku and other places in Persia.

Three physical characters of the mass of waters of the globe remain to be considered, namely, their *colour*, *phosphorescence*, and *temperature*.

The general *colour* of the sea, a blue inclining to green, is not universal; for other shades, depending apparently upon local causes, prevail in detached portions of it. The higher part of the Mediterranean, for instance, has sometimes a purple hue; in the gulf of Guinea the sea is white, and amid the Maldive islands black. The most interesting, and perhaps the only definite investigations in reference to this subject, are those of Ehrenberg on the red colour of the Red Sea. He derives it from the prevalence of a species of *oscillatoria*, a production half animal half vegetable; and it is probably to the presence of other species of *oscillatoria* that the waters near the mouth of the La Plata, as well as those of several other localities, owe the same reddish tinge. The discovery of Ehrenberg has been confirmed by De Candolle, who recently demonstrated, that the water which in the spring of 1825 reddened the waters of the lake of Morat almost to the hue of blood, belonged to the development of an animalcule, figured and described by this learned botanist, under the name of *oscillatoria rubescens*.

The *phosphorescence* of the ocean is a magnificent and imposing spectacle. Sometimes a vessel cleaving the waves appears to trace a long line of fire, and every stroke of the oar produces jets and flashes of vivid or lambent flame. In other cases, thousands of stars seem to float and gambol on the watery surface, multiply, reunite, and form a vast field of light; and again, the scene becomes more tumultuous, luminous waves rising up, rolling and breaking in a brilliant foam. It is probable that this splendid phenomenon, which varies with the state of the atmosphere, the direction of currents and winds, the latitude, and other circumstances, is chiefly owing to microscopic animals, which are most numerous in the equatorial seas, to the development of electricity, and to the decomposition of plants, fishes, and invertebrated animals, which the immense ocean and its branches nourish in inconceivable numbers.

Scarcely anything is known concerning the *temperature* of the ocean as depending upon its depth: this part of the subject is still the prey of cosmogonical hypotheses. A considerable number of experiments, however, justify us in stating the following laws in regard to the heat of the superior beds of the sea. These experiments are very important in relation to the theory of physical climate:—1. The temperature of the ocean is generally lower at mid-day than that of the atmosphere, noticed in the shade. 2. It is always higher at midnight. 3. In the morning and the evening, these two temperatures are usually in accordance. 4. The mean of a given number of observations of the temperatures of the surface of the water and the atmosphere, taken at six in the morning, at noon, six in the evening, and midnight, is constantly higher in the case of the sea, in whatever latitude the observations are made. 5. The mean temperature of the waters of the ocean, at their surface and at some distance from any continent, is thus higher than that of the atmosphere with which they are in contact. 6. The sea, over a bank, is always colder than where it is deeper; and the difference is greater, the higher the bank. This curious diminution of temperature might be very useful to the navigator; it might forewarn him of unseen danger, and prove his best sounding line.

2. The form, mutual relation, and geographical distribution of the different portions of the aqueous portion of the globe, offer subject of varied remark.

The most general division of the water is two-fold, namely, *rivers* or *streams*, and *sheets* of water. The former, according to their size, are classed into *rivers, brooks, rills*, &c. The latter consist of *lakes* or *inland seas*, and of the great terrestrial ocean, with its branches and arms. *Lakes* are of four kinds, the first class consisting of very small collections of water, which neither receive nor give out any stream; a second class, fed by springs, which receive no river, but from which one issues; a third and very numerous class, such as the great lakes of Canada, lakes *Ladoga*, *Onega*, *Constance*, *Baikal*, &c. which both receive and feed rivers; and a fourth, which receive rivers, but from which none issues. The largest and most celebrated of this fourth class is the *Caspian Sea;* Asia contains several others, and the great lake *Tchad* in Africa is one of the same kind. Such essentially belong to the interior of large continents; and although one or two occupy singular hollows or depressions below the level of the ocean, they are generally placed on elevated plains or plateaus, which have no sensible declivity. The great Ocean is divided into partial oceans, distinguished according to their localities. When it sends out large arms, particularly into the interior of the continents, they are termed seas, as, for example, the *Mediterranean* and *Black Seas;* when the arms are smaller, they receive almost indiscriminately the names of *bays* or *gulfs*, as in the instances of the *Gulf of Genoa*, the *Bay of Biscay*, the *Gulf of Guinea*. If the bay or gulf is united with the main sea, or if two seas, or portions of the same sea are joined together by a narrow neck, that neck is termed a *strait*.

The *relations* between rivers and large collections of water, are close and striking. *They feed each other.* A process of evaporation is constantly raising masses of fresh water into the air in the form of vapour, from the surfaces of oceans and lakes, which redescend upon the earth in the form of rain, and feed those innumerable streams, which flow towards the ocean and replace its waste. This process of reciprocal supply never ceases. The machinery of circulation is constantly in action, and the harmony of its operations must be admitted to be one of the most beneficent and beautiful provisions of nature.

The *geographical distribution* of rivers is mainly determined by the forms of the continents. Wherever we have long declivities, or where the central massive plateau does not descend rapidly to the level of the sea, we naturally expect considerable rivers, and *vice versa*. The special geography of the different continents will explain the nature of their respective plateaus, and therefore the causes of the lengths, &c. of their rivers; but the following table, extracted from the article "Physical Geography," in the Encyclopedia Britannica, has a universal character, and naturally finds its place here. It must be observed, that the *basin* of a river, or its hydrographical region, signifies the whole of the declivities from which the brooks and rivulets which feed it descend.

TABLE OF THE BASINS, LENGTHS, &c. OF RIVERS.

	Rivers.	*Length.*	*Area of Basin in English Miles.*	*Proportional Size of Basin.*	*Proportional Quantity of Water discharged per annum.*
Europe	Thames,	1	5,500	1	1
	Rhine,	4½	70,000	12½	13
	Loire,	4	48,000	8½	10
	Po,	2½	27,000	5	6
	Elbe,	4½	50,000	9	8
	Vistula,	4½	76,000	13½	12
	Danube,	9½	310,000	56	65
	Dneiper,	7½	200,000	36	36
	Don,	7½	205,000	37	38
	Wolga,	14	520,000	94	80
Asia	Euphrates,	9½	230,000	42	60
	Indus,	11½	400,000	72½	133
	Ganges,	10	420,000	76	148
	Yang-tse-kiang,	21½	760,000	138	258
	Amour,	16	900,000	164	166
	Lena,	13½	960,000	174	125
	Oby,	15	1,300,000	236	179
Africa	Nile,	18½	500,000	90	250
America	St. Lawrence,	22½	600,000	109	112
	Mississippi,	19	1,368,000	249	338
	Rio de la Plata,	13½	1,240,000	225	490
	Amazon (not including Araguay,)	22½	2,177,000	395	1280

No geographical theory has connected existing Lakes into a system. They originate in local causes incapable of being generalized.—The Ocean occupies what at present is

the lowest part of the terraqueous globe: its divisions and chief branches are given in the following table:—

A. The great South-Eastern Basin or Sea.	1. The *Antarctic Ocean*, confined between the South Pole and the parallel of Lat. 66° 32'.		
	2. The *Southern Ocean* or *Sea*, bounded by the Antarctic Ocean and a line joining Cape Horn, the Cape of Good Hope, the southern point of New Zealand, and Cape Horn.		
	3. The *Indian Ocean*, lying between Africa on the west, and the peninsula of Malacca, the isles of Sumatra, Java, and New Holland on the east, and bounded by Persia and Hindostan on the north.	Branches	The Red Sea. The Persian Gulf. The Bay of Bengal, &c.
	4. The *Pacific Ocean*, divided by the Equator into North and South, and inclosed between America on the east, and Asia, the islands of Sumatra, Java, and New Holland on the west.	Branches	Sea of China. Sea of Japan. Sea of Okhotsk, &c.
B. The *Western Basin or Sea*.	1. The *Atlantic Ocean*, beginning in a line from Cape Horn to the Cape of Good Hope, and terminated in the north by the Arctic Circle.	Branches	The Mediterranean Sea. The German Ocean. The Baltic, with its Gulfs. Baffin's Bay. Hudson's Bay. The Gulf of Mexico. The Carribbean Sea.
	2. The *Arctic Ocean*, surrounding the North Pole, and bounded by the Arctic Circle and the northern shores of the two continents.	Branches	The White Sea. The Sea of Kara. The Gulf of Obi, &c.

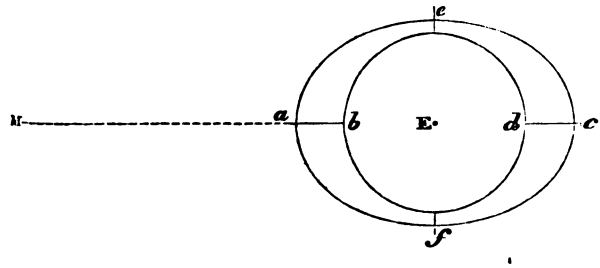
3. The *motions* of the waters of the globe are now to be considered.

The motion of *rivers* originates in the weight of water, or in its tendency to descend an inclined plane; but when a first impulse is communicated, the simple pressure of the superior portion of the mass will make it flow onwards, after its bed has lost all inclination: the Amazon, for instance, as well as many of our largest streams, have declivities scarcely perceptible, that of the great American river being only 1-27th of an inch in 1000 feet. The velocity of the current depends also upon its mass being in some manner proportional to it; which accounts for one river often receiving another without perceptibly enlarging its bed. The most striking phenomenon in the course of rivers, is the formation of *cataracts*, when the mass of water falls over a precipice or ledge of rock, and reaches suddenly a much lower level, a phenomenon of which the Falls of Niagara are a most magnificent and celebrated example. *Periodical floodings* or *overflowings* are common to all rivers whose sources and hydrographical basins are placed under the torrid zone, or in its neighbourhood; they arise from the regular and abundant rains which fall almost without interruption in the equatorial regions, now on one side, and now on the other, of the equinoctial line.*

Three distinct moving causes produce different species of motions in the *sea*.

The waters being in contact with the atmosphere, and capable of yielding to the slightest force, are agitated more or less by every agitation in the air. The zephyr wrinkles their surface; a high wind, produces perceptible undulations, which under a breeze increase into waves; these, during a storm or hurricane, rise into foaming billows, and form long and lofty ridges when their development is not impeded, and the winds blow in the same direction for a considerable length of time. The height of waves, &c., the manner in which they expand and break, their velocity and their extent, depend upon the depth of the sea and the size of the basin, as well as the force of the wind.

The first or impelling cause of the *tides* is astronomical, and owing to the attractive influence of the sun and moon. To understand this, refer to the subjoined diagram.



Suppose that the solid earth, represented by the circle E, were surrounded by a regular sphere of water—in other words, that the earth were a regular & uniform sphere. If no external body or in-

* Another phenomenon, arising out of the relation of rivers to the rocks or mineralogy of their beds, might have been remarked here, viz. the loss or disappearance of rivers, total or temporary. In the former case, they sink through a porous soil, and pass into subterranean caverns, whose issues are so remote that we cannot trace them; and in the latter, they reappear at a lower but not very distant level, after flowing along the bottom of the porous soil. With this latter phenomenon may be classed the formation of artificial bridges, caverns, &c.; the water having cleared away an inferior soft stratum of rock. The great rock bridge of Virginia is a splendid instance of the operation referred to.

fluence operated on this system, it is clear that the waters would, in obedience to the law of gravitation, arrange themselves regularly and uniformly around the earth, forming a coating or bed everywhere of the same depth. Let now an external body, M, be called into being, and observe the necessary effect of this change of circumstances. The attraction of M, in accordance with the law of gravity, varies with its distance from the point attracted, so that the particle of water immediately under it, will be more attracted by it than the particle of land at the *bottom* of the water: these two particles will thus be separated or drawn away from each other to a certain extent, *i. e.* the watery sphere, instead of being uniform as before, will bulge out as in the diagram at *a b*, beneath the body M. A little consideration will show that the same bulging out must take place at *d c*, opposite to M; for in this case *d* the particle of the land is more attracted by M than the water which lies above it; *i. e.* the tie between these two particles is diminished in power, and, as in the former case, they must separate to a certain extent. No such diversity of attraction, however, operates at *e* and *f*; and the consequence is inevitable, that the watery sphere, in order to be reduced to a state of rest or equilibrium, must assume the foregoing *ellipsoid* form, instead of the spherical. Suppose, in addition, that the solid globe E revolved daily on its axis, and it will be clear that any mark or pole, such as is represented in the diagram, will be twice a-day in shallow water, and twice a-day in deep water; in other words, the tides thus arising must ebb and flow twice in 24 hours. The body which acts in this manner on our waters with most intensity is the moon; but the sun has also a very perceptible effect. When the two influences are in unison, *i. e.* at full or new moon, we have the greatest disturbance, or *spring tides*; when they are in opposition, or at the moon's quadratures, we have the least disturbance, or *neap tides*. Had the earth as above supposed, been a regular solid of revolution, without heights or hollows, and surrounded by an uniform bed of water, the phenomena of the tides would have been wholly *astronomical*, depending upon the fact of the revolution around the earth of two aqueous spheroids — one belonging to the attraction of the moon, the other to that of the sun — of magnitudes, determinable by the tables of these two celestial bodies, and acting sometimes in unison, but generally in various degrees of opposition. But the irregularities of the earth, and the consequent geographical distribution of the waters, greatly involve the general problem, and necessitate extensive investigations. This *physical* problem of the tides, indeed, is one of the most complex and difficult in the entire range of science; and we have hitherto arrived only at a very few of the facts and laws belonging to it. It is evident, in the first place, that a sea or ocean of comparatively small extent — the Mediterranean, for instance—can have very little perceptible tide, inasmuch as the luminaries in question will attract all its particles with nearly equal energy; and if the sea stretches, like the *Caspian* or the *Baltic*, from north to south, there will be no perceptible tide whatever. Thus also, in the narrowest parts of the Atlantic, there should, astronomically speaking, be comparatively but small tides, while, in the Pacific, the phenomenon ought to be exhibited in its fullest development: and general rules of this nature might be laid down with some accuracy, were *the several seas not connected by channels*. In consequence, however, of all the great seas and oceans forming, as we have seen, only one sheet of water variously distributed, the ebb and flow of the waters in each depend not on its own tide, but are the result of the combination of that tide with currents mingling with it from the tides of other oceans. We are thus thrown upon the problems of the mode of the distribution and the rate of such tidal currents in all the seas — a problem depending upon the varying inequalities of the bed of the sea, the position of its coasts, their inclination under water, the size and direction of the strait or channel which connects it with other seas, and, in especial cases, upon the winds and currents which are not tidal. So much do these local and accidental circumstances affect the astronomical tidal wave, that while around the islands in the Pacific Ocean, where that wave is most completely brought out, it rises only to the height of one or two feet, the *derived* wave often accumulates in narrow channels, possessing little natural tide, by beating against obstructions, and being heaped up to the elevations of thirty, fifty, and even seventy feet! Mr. Whewell, and several other inquirers, have lately made a valuable contribution of empirical materials to the treatment of this hydrodynamical problem, by endeavouring to trace *co-tidal lines*, or lines which mark the contemporaneous position of the various points of the great wave which carries high water from shore to shore. The subject is not susceptible, in the meantime, of other than experimental treatment.

Besides the tides, the ocean has *currents* not owing to astronomical causes, whose complicacy is extreme, and whose origin, although connected with the *rotation* and *varying temperature* of the earth, we are yet far from minutely knowing. The chief

collections of facts concerning these currents are in the volumes of M. Rossel and Captain Sabine, from which we glean a few particulars.

First, A great current sets from the poles, north and south, towards the equator, and preserves its direction for a long space. It is owing to this current that floating masses of ice are frequently found in the temperate seas, drifted from the frozen regions; and the agency is so strong, that it blocks up the northern bays of Iceland with similar masses, from the depth of 500 feet. The failure of Captain Parry's celebrated attempt to reach the north pole, by means of boat-sledges and reindeer, is known to have been owing to the current referred to. *Secondly*, As we approach the equator, the northerly current seems to change gradually into that great western one, well known to navigators; which again, on striking against the varied coasts of the continent opposed to it, breaks into minor branches of all manner of divergence. We shall trace it in the two great seas of the earth. In the *Atlantic*, the westward tendency of the water is felt at the Canaries; and it is so regular within a large space, that to go from these islands to the eastern coast of America is much less hazardous than a short coasting voyage in Great Britain. From the Canaries, the flood of water reaches the coast of Caraccas in thirteen months; whence it enters the Gulf of Mexico, and rushes round it, in its strait parts, as the Bahama Channel, with great velocity. After continuing ten months in this circuit, it spends other two in skirting the coast of North America. Striking against the bank of Newfoundland, it now turns eastward, and ten or twelve months afterwards, we find it re-entering into itself on the coast of Africa. In all, it occupies about thirty-five months in performing a magnificent circuit of upwards of 10,000 miles. A current in the same direction, occupies the equatorial districts of the *Pacific*. Departing from the coast of Peru, it sweeps on without interruption until it is broken by that immense archipelago of islands, low banks, submarine mountains, and long coasts, against which it strikes, and which greatly modify its subsequent direction. Divided by New Holland, the southern part of it, after rushing through Bass's Strait, seems to preserve its western direction; for, mingling with other western branches, it rushes upon Madagascar, from which it glides off to the coasts of Natal, and, passing the Cape, unites with the general motions of the Atlantic. As might be suspected, from the configuration of the land, the northern division is by no means so regular. It finds its main outlet through Torres' Strait; but on meeting Sumatra, it separates into two. The first part flows along the east coast of Sumatra towards the north, as far as the bottom of the bay of Bengal; the other passes through the Straits of Sunda, and perhaps it is a portion of the same branch that is found so influential in the China sea, and which has also been detected in considerable energy in the sea of Japan, and the channel of Tartary.*

II. We have now reached a very interesting portion of physical geography — the study of the *changes which the action of water is producing and has produced upon the solid parts of the globe*. They are two-fold: the changes which have supervened within comparatively recent dates, and the changes whose records are found in the geological annals of the world.

1. The influences of the *sea* are of opposite kinds: it tends in some instances to increase the existing quantity of land, and in others to diminish it.† When the coast is low, and the bottom sandy, the waves push the sand upon the bank. At every reflux, this new sand is in so far dried; and as the prevalent wind is *from* the sea, it is generally blown inwards, and accumulates into those small sand-hills which we call downs. According to their relation to the botany of the region, these downs are destructive or innocuous. Sometimes, as on the coasts of New Holland, they are covered with plants, whose roots stretch through the sand, and bind it into a durable although increasing mass; but in other places, where there are no such plants, and no description of cement, the wind, which raises new sand from the sea, carries a portion of the downs already formed into the interior, where it slowly elevates the land, covering fields and dwellings, and converting the face of nature into a barren desert. In the Bay of Biscay, these sand-hills have overwhelmed a great number of villages mentioned in the records of the middle ages; and in the single Department of Landes, they have been threatening ten others, since the year 1802, with inevitable destruction. In Brittany and Portugal, there are many such examples; and we have a striking case of the same

* Currents arising in the ocean from so many and often opposite causes, frequently meet and conflict. When conflicting currents have nearly an equal force, they constitute a *whirlpool*: — such is the *Charybdis* in the straits of Messina, and the *Mahlström* among the Loffoden islands.

† It was the local changes produced by these two actions, coupled with phenomena attending that slow elevation of continents (Sweden) noticed near the close of last chapter, which formerly inclined respectable philosophers to assume the untenable position of changes in the level of the sea.

sort in Scotland, at the mouth of the Findhorn. The chief influence of the sea, however, is to diminish the mass of land — to encroach upon its coast. Instances of this operation are seen near every lofty coast. In usual cases, the constant and regular play of the waters hollows the lower parts of the cliffs *(gutta cavit lapidem)*, which in time fall down by their own weight; and their debris, in the form of rocks, boulder, and mud, is strewn through the neighbouring ocean. In storms, this destructive agency is fearfully augmented: whole masses of coast being dashed away, new islands formed by the violent separation of parts of the solid land, and the rocks which cannot be removed broken into pinnacles. The following table, taken chiefly from the work of M. Hoff, presents a chronological series of the most important occurrences of this violent nature since the eighth century. It will give an idea of the amount of the present form of the earth which may be attributed to the cause referred to.

Year.	
800.	The sea carries off a large quantity of the soil of Heligoland.
800—900.	Tempests change the coasts of Brittany: valleys and villages are swallowed up.
800—950.	Violent storms agitate the lagunes of Venice. The isles of Ammiano and Costanziaco disappear.
1044—1309.	Terrible irruptions of the Baltic on the coasts of Pomerania, which commit great ravages, and give rise to the popular rumour of the disappearance of the fabulous city of Vineta.
1106.	Old Malamocca, a considerable town near Venice engulfed by the sea.
1218.	A great inundation formed the gulf of Jahde, so named from the small river which watered the fertile country destroyed by this catastrophe.
1219, 1220, 1221, 1246, 1251.	Terrible storms form the island of Wieringen on the coast of Holland.
1277, 1278, 1280, 1287.	Inundations ingulf the fertile country of Reiderland, destroy the town of Torum, 50 towns, villages, and monasteries, and form the Dollart; the Tiam and the Eche, which watered this little country, disappear.
1282.	Violent tempests break the isthmus which united Holland with Friesland, and form the Zuiderzee.
1240.	An irruption considerably changes the western coast of Schleswig; many fertile territories are swallowed up, and the arm of the sea which separated the island of Nordstrand from the continent is greatly enlarged.
1300, 1500, 1649.	Three-fourths of Heligoland are swept away.
1300.	Ciparum in Istria destroyed.
1303.	A great part of Rugen ingulfed, and many villages on the coasts of Pomerania.
1337.	An inundation carries off fourteen villages in the isle of Cadsand, in Zealand.
1421.	An inundation covers the Bergseweld, destroys twenty-two villages, and forms the Biesbosch, which extends from Gertruidenberg to the isle of Dordrecht.
1475.	Land near the mouth of the Humber swept away, and several villages destroyed.
1510.	The Baltic forms the mouth of the Frisch-Haff.
1530—1532.	The sea ingulfs the town of Kortgene in the island of North Beveland; and in the latter year carries away the eastern portion of South Beveland, with several villages, and the towns of Borselen and Remerswalde.
1570.	A violent storm destroys half of the village of Scheveningen, north-west of the Hague.
1625.	The sea detaches part of the peninsula of Dars, in Swedish Pomerania, and forms of it the island of Zingst.
1634.	An irruption submerges the whole island of Nordstrand, 1358 houses, churches, and towns are destroyed; 6408 persons and 50,000 head of cattle perish. There now remain, of this once fertile and flourishing island, the three islets named Pelworm, Nordstrand, and Lütze-moor.
1726.	A violent storm changes the salt marsh of Araya, in the province of Cumana, into a gulf several leagues wide.
1770—1785.	Currents and tempests hollow out a channel between the high and the low parts of Heligoland; and transform into two islets, this island, so extensive before the eighth century.
1784.	A violent storm, according to M. Hoff, forms the lake of Aboukir in Lower Egypt.
1791—1793.	New irruptions destroy the dikes, and carry off other parts of the already so reduced island of Nordstrand.
1803.	The sea sweeps away the last remains of the Priory of Crail in Fifeshire.*

But violently though the sea thus acts upon the earth, it is to the action of *rivers* that we trace by far the largest amount of the changes induced by the influence of water upon the land of the globe; and this not through the instrumentality of the occasional torrents, which hollow out the ravines of highland districts, and scatter the boulders and confused debris of the mountains upon the low lands, but through their slow and persistent power to convey downwards the mud and fine particles of their beds, and to deposit them in the stiller places of their onward course. In the highest parts of the earth, there is a constant progressive decomposition or mouldering of the most solid rocks, by meteorological causes. The moisture which enters every crevice of a rock ere long separates the two parts still farther, partly by its expansion on being frozen; and in short, what we may term the dissolving power of the air, reduces by degrees the hardest stones to fine particles, which the rains wash down and deliver to the currents on the sides of the mountain, which on their part carry them to the rivers, and these to the lower territories. Every river carries down in this way a very large quantity of what previously was the substance of the higher

* With such sudden and terrible actions of the sea, may be classed the ruin occasioned by the bursting of lakes, and the sudden outpouring of their waters upon the low ground. Instances are on record of accidents of this description, fully as dreadful in their consequences as most irruptions of the ocean.

country, and mingles it with the remains of such animals, vegetables, &c. as may happen to have fallen into its stream; so that we have, through the agency of rivers, a general abrading or levelling power which fills up the valleys and lower parts of the earth, by matter torn from its more elevated parts.

The important question is, how this mud and various debris is deposited, or what is the precise nature of the new formation or new soil thus constituted in the low lands? There are three distinct cases worthy of especial remark. *First*, As the power of water to transport matter heavier than itself depends upon the velocity of its current, it is clear, that as the current grows less impetuous, the massier portion of the debris — stones, &c. — will be deposited in the bed of the river itself; and if during its course it spreads out in any locality into an inland lake, or almost still sheet of water, the finer particles it has borne along will be deposited there. In the case, for instance, of the Rhone, which expands into the Lake of Geneva, probably the larger fragments of the upper Alps are left behind it long before it reaches the basin of the lake; but it will have carried downwards, as far as that basin, a vast mass of finer matter, of which soil or new rock might ultimately be composed, and which will there be deposited, in consequence of the marked diminution in the power of the stream. The lake of Geneva must then be gradually filling up, and in consequence of layer above layer of fine matter being regularly stratified upon its bed by the action of the Rhone. That lake is now the receptacle of the finer debris of the Alpine countries of the Valais. It is the record of what species of matter they at present contain; but in the course of ages it will as it fills up cease to be so; and the Rhone, having no longer room to diffuse itself in that region, will pass along with unabated velocity, and carry that debris to some still lower level. This phenomenon is worthy of especial attention. We see in it how a confined bed of stratified matter may be formed within an inland country; how it may contain the annals or geological character of a large district during the epoch of its formation; and finally, how deposition may be interrupted, and the seat of the deposit transferred to another, and perhaps very distant locality. Neither is the phenomenon peculiar; it is repeated wherever we have lakes into which rivers flow. The lakes of Upper Canada are slowly filling up, like the lake of Geneva. *Secondly*, Where the river nowhere expands into a lake, the finer or chief part of the debris will be carried to its mouth, and deposited where the tide meets it with sufficient force to cause a degree of stagnation: sometimes this is beyond the mouth of the river, where we have then a bank or *bar*. At other times, it is considerably up the river, where banks arise, and ultimately divide the single stream into several minor branches, forming small islands; but for the most part it is at the mouth, where new land gradually appears above the water-surface, and the river seems to push the sea backwards. This latter is the origin of deltas, like those of the Nile, the Ganges, the Rhone, and the Po; and offers an explanation of the incontestible fact, that many cities, which, at epochs well known in history, had flourishing harbours, are now several leagues inland, and ruined in some cases by their change of situation. Venice herself, once the empress of the sea, perceives her lagoons shrinking, and, in memorial of the mutability of things, herself likely to be left as a decaying wreck upon the shore. *Lastly*, These two operations exhibit low grounds, in many parts of the globe, in the act of being filled up by stratified deposits, of local peculiarities; but the currents of the ocean, by combining with the effect of rivers, can produce results, similarly stratified, on a more gigantic scale. Operations of this kind, which are not uncommon, are finely and adequately exemplified on the coasts of North America. At this moment, all the debris brought down by the mighty flood of the Mississippi is delivered into the gulf stream which sweeps the Gulf of Mexico, and which, in its subsequent progress along the coast of North America, mingles it with the discharge of the rivers east of the Alleghanies; so that it must have been regularly distributing for a long period over some mighty space, not less perhaps than the entire floor of the North Atlantic, a stratified formation, involving much of the history of minerals, and of the vegetable and animal life of America, and certainly nothing inferior, either in extent or thickness, to any one of those formations which are thought to characterize a geological epoch. Nor is this a singular instance; for something of the same phenomenon must occur with the rivers south of Cape St. Roque; and many illustrations could be found on such of the coasts of Asia as are swept by the currents from the Pacific.

Resuming our remarks concerning the changes induced upon the solid land by the levelling or abrading agency of rivers and seas, and reflecting on the existence of an elevating cause (a power whose origin is unknown, but which can force up mountain ridges, and raise continents to loftier levels), we may now conceive what would be presented to the inquirer long ages hence, should the bed of the existing ocean be

raised, and, in compensation, many existing continents submerged. Over vast spaces such as the floor of the Atlantic, regular strata would appear, having clear marks of being originally horizontal, whatever inclination the fracturing and elevating cause might then have given them, and varying in composition and in the relics they contained, precisely as that old continent varied, of whose debris they were formed. Elsewhere, confined and local stratifications would be detected, partly marine, partly fluviatile, having much variety of character. In some places there would be found marks of sudden wreck, and of convulsion so manifest and tremendous, that although springing only out of partial erruptions of the sea, rash speculation might at first incline us to infer from it some universal and overwhelming catastrophe, especially as many portions of this system of various stratification would be pierced by the igneous rocks, which are products of those submarine volcanoes that often agitate our oceans, and sometimes upheave new islands. Such would be the system of the new continents, capable of upholding animal and vegetable life; and of the debris of such continents, in the long course of ages, new stratifications would be again formed, which also might be upreared when their parent masses had sunk. In fact, we see no conclusion to the play of those two simple causes which appear to regulate the condition of the earth.

2. These probable annals of the future, are the actual annals of the past. The immense range, and great varieties, of the stratified rocks upon which the geologist speculates, bear every mark of having been deposited according to the operations to which we have referred — out of the debris of submerged continents: and of having been raised from their low and horizontal submarine position, by the action of that power, which, at different epochs, upheaved our mountain ranges.

To study these stratified rocks in detail, is the business of the geologist; to note their meaning and general relation to existing changes, is sufficient for the physical geographer. Many of them, however, are of economical importance, and enter among the items of the actual wealth of countries; on which account, we subjoin a table of all the formations, taken from the work of Mr. Lyell.

The grand divisions of the formations of all epochs are, it will be observed, hypogene (plutonic and metamorphic), volcanic, aqueous, and alluvial. The *hypogene* or *nether-formed* rocks, are those chrystalline masses referred to at the close of the first section of this chapter; — the *plutonic;* and others, supposed to have been originally stratified, but much altered in texture by contact with the great heat of the plutonic rocks, viz. the *metamorphic*. The *volcanic* rocks are the produce of existing or ancient volcanoes, *i. e.* of the agents which produced the plutonic rocks, acting not under pressure, but sending forth its molten productions upon the surface of the globe. The *aqueous* formations are those deposited by the sea, or at the bottom of lakes; and the *alluvial*, those laid down by rivers. It is among the earlier formations, classed according to *time*, that those metallic veins are found, which, as we shall afterwards see, add much to the wealth of different countries. The carboniferous or coal formation, chiefly originating from the debris of the buried vegetation of old continents, and the great *lime* formations are also important elements of wealth. More minute accounts of the origin and nature of these formations must be sought for in treatises on geology.

TABLE SHOWING THE RELATIONS OF THE ALLUVIAL, AQUEOUS, VOLCANIC, AND HYPOGENE FORMATIONS OF DIFFERENT AGES.

Periods.		*Formations.*		*Some of the Localities where the Formations occur.*
I. RECENT.		Alluvial		Beds of existing rivers, &c.
		Aqueous	*a.* Marine	Coral reefs of the Pacific.
			b. Freshwater	Bed of Lake Superior, &c.
		Volcanic		Etna, Vesuvius.
		Hypogene	*a.* Plutonic	*Concealed;* foci of active volcanoes.
			b. Metamorphic	*Concealed;* around the foci of active volcanoes.
II. TERTIARY.	1. Newer Pliocene.	Alluvial		Gravel covering the Newer Pliocene strata of Sicily.
		Aqueous	*a.* Marine	Val di Noto, Sicily.
			b. Freshwater	Colle, in Tuscany.
		Volcanic		Val di Noto, Sicily.
		Hypogene	*a.* Plutonic	*Concealed;* foci of Newer Pliocene volcanoes — underneath the Val di Noto.
			b. Metamorphic	*Concealed;* near the foci of Newer Pliocene volcanoes — underneath the Val di Noto.
	2. Older Pliocene.	Alluvial		Norfolk?
		Aqueous	*a.* Marine	Subappenine formations.
			b. Freshwater	Near Sienna.
		Volcanic		Tuscany.
		Hypogene	*a.* Plutonic	*Concealed;* foci of Older Pliocene volcanoes — beneath Tuscany.
			b. Metamorphic	*Concealed;* probably near the same foci.

	Periods.	Formations.	Some of the Localities where the Formations occur.
II. TERTIARY—*continued.*	3. Miocene.	Alluvial	Mont Perrier, Auvergne — Orleanais.
		Aqueous: *a.* Marine	Bordeaux. Dax.
		Aqueous: *b.* Freshwater	Saucats, near Bordeaux.
		Volcanic	Hungary.
		Hypogene: *a.* Plutonic	*Concealed*; foci of Miocene volcanoes—beneath Hungary.
		Hypogene: *b.* Metamorphic	*Concealed*; probably around the same foci.
	4. Eocene.	Alluvial	Summit of North and South Downs?
		Aqueous: *a.* Marine	Paris and London basins.
		Aqueous: *b.* Freshwater	Isle of Wight — Auvergne.
		Volcanic	Ronca, Vicentine; oldest volcanic rocks of the Limagne d'Auvergne.
		Hypogene: *a.* Plutonic	*Concealed*; foci of Eocene volcanoes—beneath Vicentine and the Limagne d'Auvergne.
		Hypogene: *b.* Metamorphic	*Concealed*; probably near the same foci.
III. SECONDARY.	1. Cretaceous group.	Alluvial.	
		Aqueous: *a.* Marine	Wiltshire. North Downs. Flamborough Head.
		Aqueous: *b.* Freshwater.	
		Volcanic	Northern Flanks of the Pyrenees? Near Dax?
		Hypogene: *a.* Plutonic.	
		Hypogene: *b.* Metamorphic.	
	2. Wealden group.	Alluvial	Portland "Dirt-bed" containing pebbles.
		Aqueous: *a.* Marine.	
		Aqueous: *b.* Freshwater	Weald of Surrey, Kent, and Sussex.
		Volcanic.	
		Hypogene: *a.* Plutonic.	
		Hypogene: *b.* Metamorphic.	
	3. Oolite group.	Alluvial.	
		Aqueous: *a.* Marine	Oxford. Bath. Jura chain.
		Aqueous: *b.* Freshwater.	
		Volcanic	Hebrides?
		Hypogene: *a.* Plutonic	*Concealed*; beneath the Hebrides.
		Hypogene: *b.* Metamorphic	
	4. Lias group.	Alluvial.	
		Aqueous: *a.* Marine	Lyme Regis. Whitby. Aberthaw.
		Aqueous: *b.* Freshwater.	
		Volcanic	Hebrides?
		Hypogene: *a.* Plutonic.	
		Hypogene: *b.* Metamorphic	Alps? Valorsine in Savoy.
	5. New Red Sandstone and Magnesian limestone group.	Alluvial.	
		Aqueous: *a.* Marine	Cheshire. Staffordshire. Vosges. Westphalia. (Muschelkalk.)
		Aqueous: *b.* Freshwater.	
		Volcanic	Near Exeter, Devon.
		Hypogene: *a.* Plutonic	*Concealed*; beneath Devonshire.
		Hypogene: *b.* Metamorphic.	
	6. Carboniferous and Old Red Sandstone group.	Alluvial.	
		Aqueous: *a.* Marine	Clifton. Mendip. Edinburgh.
		Aqueous: *b.* Freshwater	Coal measures of North of England and near Edinburgh.
		Volcanic	Forfarshire. Edinburgh. Fife. Durham. High Teesdale.
		Hypogene: *a.* Plutonic	*Concealed*; beneath Edinburgh, Northumberland, Durham.
		Hypogene: *b.* Metamorphic	Near the Plutonic rocks of the same period.
IV. TRANSITION.	7. Silurian and Greywacké group.	Alluvial.	
		Aqueous: *a.* Marine	Wenlock, Shropshire.
		Aqueous: *b.* Freshwater.	
		Volcanic	Shropshire.
		Hypogene: *a.* Plutonic	*Concealed*; beneath Shropshire.
		Hypogene: *b.* Metamorphic	Near the Plutonic rocks of the same period.
V. PRIMARY ROCKS.*	. . . . .	Alluvial, Aqueous, Volcanic	Probably all destroyed by denudation, or converted into hypogene.
	. . . .	Hypogene: Plutonic	Perhaps a considerable part of the granite now visible.
		Hypogene: Metamorphic	Probably a large proportion of the gneiss, mica-schist, and other stratified crystalline rocks now visible.

§ 3. *The Constitution and Motion of the Atmosphere. Physical Climate. Meteorological Phenomena.*

I. THE atmosphere, or that elastic fluid which surrounds the globe, performs the most important functions in the economy of nature. It is essential to the life of a great portion of organic beings, spreads moisture over the land, receives and dissipates or decomposes the mephitic vapours exhaled from the earth's surface, and by its incessant motion tempers the extremes of heat and cold; thus enabling man to support himself in every climate from the equator to the vicinity of the pole.

1. That well known instrument, the *barometer*, enables us to measure the weight

* By primary formations are meant those, whether stratified or unstratified, in which no distinct fossils have as yet been discovered, and which are older than those most ancient European rocks, the transition or greywacké.

of the atmosphere, from which we can approximately compute its *height*. The whole elastic fluid around us is nearly equal in weight to a sheet of mercury of a depth of thirty inches, or to a sheet of water of thirty-four feet; and were its density everywhere the same as at the surface, it would thus reach no higher than 27,000 feet, or five miles. But its extreme elasticity causes it to expand as it rises, and we must therefore search for its upper limit much farther off. A limit is absolutely fixed by physical considerations, and perhaps there is no inferior one. The highest portion of the atmosphere, which is carried round in twenty-three hours and fifty-six minutes, by the rotation of the earth on its axis, would be projected into space if their centrifugal force at that distance was not less than their gravitation towards the centre. But the centrifugal force is directly as the distance, while the power of gravity diminishes as its square. From which we infer, that the balance or equilibrium of the two influences will take place at the distance of 6.6 radii from the earth's centre, or at the elevation of 22,200 miles. The distance of this extreme boundary surpasses all ordinary conceptions of the space occupied by the dilatable fluid amid which we live, yet it scarcely exceeds the eleventh part of the distance of the moon, which was held by the ancients to communicate with our atmosphere. If it really spreads out to the limit now assigned, it must at its remote verge attain a degree of tenuity which would utterly baffle imagination to conceive.

2. The most general feature or characteristic of the air, considered with regard to its elevation, is the fact, that it everywhere diminishes in heat as it ascends — the fact alluded to in the first section of this chapter, when speaking of the influence of *elevations*. This is owing to the physical law, that gases, when diminished in density, acquire an increased capacity for heat; so that, when a body is raised in the air, part of its heat must be abstracted by the mass of rarer fluid which surrounds it. Hence the existence of great degrees of cold in all climates as we ascend mountains; and hence that line of perpetual congelation, to which we formerly alluded, osculating the earth at the poles, and bulging out at the equator like an eccentric ellipsoid. Many theories and formulæ have been proposed to express the law of this decrease of heat; we prefer that of Sir John Leslie. If B and b denote the barometric pressure at the lower and upper stations; then will $\left(\frac{B}{b} - \frac{b}{B}\right) \times 25$ express, on the centigrade scale, the diminution of heat in ascent. Hence, for any given latitude, the precise point of elevation may be found, distinguished by any temperature, for instance, the point where eternal frost prevails. Put $x = \frac{b}{B}$ and $t =$ the standard temperature of the place; then $\left(\frac{1}{x} - x\right) \times 25 = t$, or $x^2 + \cdot 04\, tx = 1$, which equation being solved, gives the relative elasticity of the air at the limit of congelation, whence the corresponding height is determined. — It is proper to remark, that by aid of the physical law expressing the relative elasticity or weight of the air at its different elevations, and of this formula, methods have been evolved by which the height of stations are discovered by noting the condition of the barometer or thermometer.

3. The atmospheric phenomenon next in order of generality, gives rise to the striking and varied action of *winds*. Winds arise from the great expansibility of the air by heat, combined with the fact, that different parts of the earth are very unequally heated. Suppose a small part of the earth's surface to be suddenly and considerably heated above the temperature of the surrounding portions, it is clear, in the first place, that the column of superincumbent air will be correspondently heated, and thereby greatly expanded. Could that column maintain an independent existence, or were it *rigid*, the expansion would merely increase its length; but as the air is fluid, the column at the top will manifestly *flow over* upon the neighbouring masses, so that the *weight* of the air over the heated part of the earth would be diminished. It is easy to see that a motion or rush of air would supervene at the earth's surface in such circumstances, towards that heated column, from all sides of it; for the weight of neighbouring columns being greater, they would *bear in*, so to speak, upon the lighter column, and by a simultaneous rush of greater or less violence, supply the comparative void. Two actions or motions are thus necessarily occasioned by the fact of the overheating of any spot on the earth: — first, a wind *from* the heated spot in the upper regions of the atmosphere, arising from the flowing over of the expanded column; and secondly, a wind *towards* the heated spot near the earth's surface, or in the lower regions of the atmosphere, arising from the superior weight of the surrounding aerial columns. Every variation, then, in terrestrial temperature must tend to originate two systems of winds, of contrary and counterbalancing directions, which retain the atmosphere in equilibrium, and operate, by a wholesome circulation, in moderating what would otherwise

be extremes of temperature. All local winds, such as the Bize, Sirocco, Harmattan, Samiel or Simoom, admit of explanation on the foregoing principles; but we shall confine ourselves to a particular description of a very general local wind, the *land and sea breezes*. A body of water is much less affected by the presence or absence of the sun than a mass of land. It has been computed, that the change of temperature in the air, caused by the succession of day and night, is about thirty times less upon a spacious lake than over the surrounding land, — the air over the land being much overheated during the day, and underheated during the night. During the day, accordingly, in every latitude, but especially within the tropics, a refreshing wind blows from the sea, and is succeeded by an opposite current from the interior of the land on the approach of evening and during a great part of the night. The ordinary phenomena of these winds are well described by Captain Dampier: —

"These sea-breezes do commonly rise in the morning about nine o'clock, sometimes sooner, sometimes later. They first approach the shore so gently, as if they were afraid to come near it; and ofttimes they make some faint breathings, and, as if not willing to offend, they make a halt, and seem ready to retire. I have waited many a time, both ashore to receive the pleasure, and at sea to take the benefit of it. It comes in a fine, small, black curle upon the water, when as all the sea between it and the shore not yet reached by it is as smooth and even as glass in comparison. In half an hour's time after it has reached the shore, it fans pretty briskly, and so increaseth gradually till twelve o'clock; then it is commonly strongest, and lasts so till two or three a very brisk gale. About twelve at noon it also veers off to sea two or three points, or more, in very fair weather. After three o'clock it begins to die away again, and gradually withdraws its force till all is spent; and about five o'clock, sooner or later, according as the weather is, it is lulled asleep, and comes no more till the next morning. These winds are as constantly expected as the day in their proper latitudes, and seldom fail but in the wet season. On all coasts of the main, whether in the East or West Indies, or Guinea, they rise in the morning, and withdraw towards the evening; yet capes and headlands have the greatest benefit of them, where they are highest, rise earlier, and blow later. Land-breezes are as remarkable as any winds that I have yet treated of: they are quite contrary to the sea-breezes; for those blow right from the shore, but the sea-breeze right in upon the shore; and as the sea-breezes do blow in the day and rest in the night, so, on the contrary, these do blow in the night and rest in the day, and so they do alternately succeed each other. For when the sea-breezes have performed their offices of the day, by breathing on their respective coasts, they, in the evening, do either withdraw from the coast, or lie down to rest. Then the land-winds, whose office is to breathe in the night, moved by the same order of divine impulse, do rouse out of their private recesses, and gently fan the air till the next morning; and then their task ends, and they leave the stage. There can be no proper time set when they do begin in the evening, or when they retire in the morning, for they do not keep to an hour; but they commonly spring up betwixt six and twelve in the evening, and last till six, eight, or ten in the morning. They both come and go away again earlier or later, according to the weather, the season of the year, or some accidental cause from the land; for on some coasts they do rise earlier, blow fresher, and remain later, than on other coasts, as I shall show hereafter. These winds blow off to sea, a greater or less distance, according as the coast lies more or less exposed to the sea-winds; for in some places we find them brisk three or four leagues off shore, in other places not so many miles, and in some places they scarce peep without the rocks, or, if they do sometimes in very fair weather make a sally out a mile or two, they are not lasting, but suddenly vanish away, though yet there are every night as fresh land-winds ashore at those places as in any other part of the world. Indeed, these winds are an extraordinary blessing to those that use the sea in any part of the world within the tropics; for as the constant trade-winds do blow, there could be no sailing in these seas; but, by the help of the sea and land-breezes, ships will sail 200 or 300 leagues, as particularly from Jamaica to the Lagune of Trist, in the Bay of Campeachy, and then back again, all against the trade-wind. The seamen that sail in sloops or other small vessels in the West Indies do know very well when they shall meet a brisk land-wind by the fogs that hang over the land before night; for it is a certain sign of a good land-wind to see a thick fog lie still and quiet, like smoke over the land, not stirring any way; and we look out for such signs when we are plying to windward. For if we see no fog over the land, the land-wind will be but faint and short that night. These signs are to be observed chiefly in fair weather; for in the wet season fogs do hang over the land all the day, and it may be neither land-wind nor sea-breeze stirring. If in the afternoon, also, in fair weather, we see a

tornado over the land, it commonly sends us forth a fresh land-wind. These land-winds are very cold, and though the sea-breezes are always much stronger, yet these are colder by far. The sea-breezes, indeed, are very comfortable and refreshing; for the hottest time in all the day is about nine, ten, or eleven o'clock in the morning, in the interval between both breezes; for then it is commonly calm, and then people pant for breath, especially if it is late before the sea-breeze comes, but afterwards the breeze allays the heat. However, in the evening again, after the sea-breeze is spent, it is very hot till the land-wind springs up, which is sometimes not till twelve o'clock, or after."*

It will be manifest that, viewing the general relations of the different parts of the earth to the sun, the operation we have described and illustrated in the case of land and sea breezes must proceed on a gigantic scale. The air superincumbent over the torrid zone being heated to a great degree above that superincumbent over the temperate and frigid zones, must, as before explained, *overflow* in the superior parts of its column, and in the inferior parts there will be a counterbalancing current from the poles towards the equator. If the earth were at rest, we would thus have two counterbalancing and general tendencies of the winds, a north wind at the earth's surface in north latitudes, and a south wind at the surface in southern latitudes, and their opposites in the higher regions of the atmosphere; but as the earth is not at rest, revolving, as already explained, on its axis, in somewhat less than twenty-four solar hours, a complicacy of action springs from the combination of these two causes, which, well considered, yields a solution of the most remarkable phenomena of winds. Were the atmosphere in a state of internal rest, it would evidently partake of the rotatory motion of the earth, and continue internally unaffected by it; but if a column is propelled from the pole towards the equator, it comes from places whose celerity of rotation is small to places where it is greater, and consequently turns with less celerity to the east than those places do with which it comes in contact: it will therefore in such circumstances seem to flow in an opposite direction, as from *east to west*. The deviation of the wind from its original direction will obviously be the greater the more the velocity of rotation of the point where the motion first originated differs from the velocity of rotation of the place at which the wind is observed, or, in other words, the greater the difference of geographical latitude of the two places; at the equator, a current from either pole will become an east wind, having passed through all degrees of north and south-east through the temperate regions. "These great south and north currents," says the author of Physical Geography, in the Encyclopædia Britannica, "which are to be considered as the *primary* winds, receive various modifications. The under current, which proceeds from the polar regions, having impressed upon it the slow rotatory motion of these regions, does not acquire in its journey the velocity of the parts it passes over. Instead, therefore, of proceeding directly along the meridian, it is deflected to the westward. It pursues this lateral course more and more as it approaches the torrid zone, and the impulse south and north being destroyed when the currents from the opposite hemisphere meet at the equator, the motion westward alone remains. This constitutes the well known trade wind, which blows from the east at the equator, from the north-east at the northern tropic, and the south-east at the southern. The upper and counter current again, carrying with it the rapid velocity of the equatorial regions, does not travel right along the meridian, but deviates more and more to the east as it advances; and when its progress towards the pole is stopped by the accumulation of air from the opposite meridians, the motion eastward alone remains, and it settles into a west wind. Thus a constant east wind should prevail at the equator, and a constant west wind near the poles; but the latter, being primarily an upper current, may not be invariably felt as a west wind at the surface. It does not follow, however, that the upper and under currents preserve their relative situation over all the temperate zone. From the greater accumulation of air in the higher latitudes, and from variations of temperature produced by local causes, the upper current will often be bent down to the surface, and the lower current ascend. This interchange will take place occasionally at all parts of the temperate zone. Hence, in high latitudes, storms of wind, which mingle the warm upper current with the cold air below, always produce an increase of heat. In the northern hemisphere, then, when the cold current from the pole sweeps the surface rapidly, we have a *north* wind; it becomes a *north-east* wind when its motion southward is retarded; an *east* wind when it is checked, and a *south-east* when it is deflected back, by mingling with a current from the south; all of which, except the last, are generally found to be

* Voyages, Vol. II. Part. III. ch. iv. "Of Land and Sea breezes."

cold winds. When the warm current from the south descends and sweeps the surface, we have a *south* wind if its motion northward is rapid; a *south-west* when its motion northward is retarded; a *west* wind when it is checked; and a *north-west* when it meets and mingles with a current from the north. All these, except the last, are generally warm winds, as experience proves. The line of division between the upper and lower currents should be where the mercury stands at 15 inches, which is at the height of 3½ miles. This theory, upon the whole, agrees tolerably well with the facts. But the variable surface and temperature of the land greatly affect the course and velocity of the winds. In the torrid zone, within the parallel of 25° or 30°, on each side of the equator, the trade winds blow constantly from the east. From the superior warmth of the northern hemisphere, the line that separates the opposite trade winds is not the equator, but the second or third parallel north. To a certain extent, also, they follow the course of the sun, reaching a little further into the south hemisphere, and contracting their limits in the north when the sun is on the south side of the equator, and making a reverse change when he declines to the north. In a zone of variable breadth in the middle of this tract, calms and rains prevail, caused, probably, by the mingling and ascending of the opposite aerial currents. High lands change or interrupt the course of the trade winds. Thus, under the lee of the African shore, calms and variable winds prevail near the Cape Verd Islands, while an eddy or counter current of air from the south-west is generated under the coast of Guinea. The lofty barrier of the Andes shelters the sea on the Peruvian shores from the trade winds, which are not felt till a ship has sailed 80 leagues to the westward; but the intervening space is occupied by a wind from the south. In the Indian Ocean the trade wind is curiously modified by the lands which surround it on the north, east, and west. The southern trade wind blows regularly from the east and south-east, from 10° of south latitude to the tropic, but in the space from 10° south latitude to the equator, north-west winds blow during our winter, (from October to April,) and south-west in the other six months; while, in the whole space north of the equator, south-west winds blow during summer, and north-east during winter.

"The region of constant winds is confined within the 30th parallel on each side of the equator. On the outer side of these limits, calms prevail pretty generally over a narrow space, beyond which the region of variable winds extends to the pole. In the open sea, where the true direction of the winds is best known, navigators have repeatedly observed that throughout this region the prevailing wind is from the west. Mr. Forster observes, that beyond the tropics, the west winds are the most universal. That east winds have an ascendancy within the Antarctic circle, as he thinks, may be questioned; few observations having been made there, and those few not to be depended on, in consequence of the local influence of the ice. According to the author of Lord Anson's voyage, "A westerly wind almost perpetually prevails in the southern parts of the Pacific Ocean," (he speaks of latitude 60°,) and a similar wind in the northern parts carried the Spanish galeons from Japan to California, along the parallel of 35° or 40°. West winds prevail in Kamchatka; they blow three-fourths of the year in Hudson's Bay; the west and north-west winds predominate greatly at Melville Island; and it is a familiar fact among mariners, that, by means of these winds, the voyage eastward across the North Atlantic is generally accomplished in about half the time of the voyage westward. On the west coast of Europe, too, the west and south-west winds are the most general. It is remarked, also, that in our climate, south and south-east winds are the most rare; that winds between north and east are almost invariably cold; those between south and west warm; and those between north and west of a mixed character. So far the facts correspond generally with the theory, though many anomalous circumstances may be found.

"The *change of the seasons* which affects the local temperature so much, necessarily influences the atmospheric currents. Accordingly, the most violent tempests are about the equinoxes, and in every country there are prevailing winds peculiar to certain seasons. It may be suspected, that most of the winds observed on land or in confined seas are merely local eddies, or reflex currents, produced by the irregularities of the surface. Thus, while the south-west wind prevails almost one-half of the year at Dover, London, and in the west of England generally, it is scarcely felt at Liverpool, which lies in the gorge of a valley, where the western chain of hills is interrupted; and on the other hand, the south-east, so uncommon in the rest of England, is the predominating wind here. In the long basin of the Red Sea, the wind blows in no direction but right up or down. In Lancaster Sound, Captain Parry found the wind to blow always either east or west. For ten months of the year, a wind (which is probably a smaller branch of the north trade wind) blows constantly up the valleys of

the Mississippi and Ohio, preserving a breadth in the latter of twelve or fifteen miles. In the list of *Vents Dominans* for the interior of Europe, collected by Cotte, nothing like a system can be discovered — nothing but local currents running in every possible direction, according to the position of mountains and valleys. Winds, indeed, even when strong, are often confined to a space surprisingly small. In the temperate, but still more in the frigid zone, two or three winds are often seen blowing from, or to, different points within a few leagues; nay, of two ships within sight of one another, one is sometimes becalmed, while the other is seen struggling with a storm. In the northern seas, even strong gales, when they have carried a ship into frozen water, invariably desert her, or give place to a wind which blows from the ice. The effect can only be attributed to the comparative coldness of the ice, and warmth of the water, generating a local descending current over the one, and an ascending current over the other."

4. Hitherto we have spoken of the atmosphere only as a permanently elastic body; but it contains, besides, a mass of *vapour*, or rather a vaporous atmosphere, which, supplied by evaporation, regulated by its own laws, and affected by colds and heats in a peculiar manner, mingles with the elastic atmosphere, and produces clouds and rain. The phenomena originating in the intermingling of these two atmospheres are most various and complex. We cannot allude in this work to more than a very few of the more prominent. Owing to a want of correspondence between the elasticities of the successive beds of vapour, and the heat of the corresponding beds of the dry air, each portion of air in rising vertically grows gradually damper; and after having reached a certain altitude, again becomes drier. The intermediate region, or the region of extreme humidity, which is the region of *clouds*, varies with the seasons and circumstances, but we shall not much err if we estimate its average position at the height of two miles at the pole, and four miles and a half under the equator. The general theory of *rain* is remarkably simple. As the air, on growing warmer, becomes drier, or capable of containing more moisture, so it is disposed, on cooling, to part with its moisture in the form of rain. The quantity of moisture which air can hold increasing in a much faster ratio than its temperature, it is plain that the intermingling of two saturated portions of different temperatures must cause the resulting mass to release portions of its vapour, and constitute rain. The occurrence and quantity of rain at any place are dependent, partly on the currents in the whole atmosphere, and partly on the changes of local temperature. Referring the student of this part of meteorology to Mr Daniell's Essays, we may state generally, that rain will be more copious at the equator than at the poles — at the sea-coast than in the interior — and in mountains and high grounds than in plains. Winds, too, exert a certain influence, which at any particular place depends on their temperature, and on their having traversed a dry or a humid surface. Where so many causes interfere, whose effects are scarcely capable of estimation, it would be difficult to determine the depth of rain proper to each parallel, even were our observations more numerous and accurate than they are. The following is the estimate by Humboldt, to whose authority we defer in every question of this kind: —

Lat.	Eng. Inches.	Lat.	Eng. Inches.
0°	96	45°	29
19	80	60	17

Since the supply of humidity is greatest in the vicinity of the sea, the rains must be generally more abundant there than in the interior. On the other hand, currents of air fraught with vapour move with great rapidity, and the atmosphere is far from needing an entirely new suppiy from the ocean after each precipitation, because three-fourths probably of the raiu that falls soon rises again into the air, and continues thus to circulate between the clouds and the earth. These circumstances lead us to conclude, that the difference in the annual depth of rain, between inland places and those on the coast, is not so great as might be imagined. We find, accordingly, that a small increase of elevation compensates for a great distance from the sea.

The elevation of the land has a much more marked effect on the quantity of rain than its distance from the sea. Mountains precipitate the humidity of the atmosphere, not so much by attracting it to their summits, as in consequense of their rocky or grassy sides, when acted upon by the sun, heating large masses of air in the cold upper regions of the atmosphere. These warm masses of air, which abstract moisture from the aerial columns around them, stream upwards, and mingle with the cold strata above, or come into contact with cold currents moving laterally, or suffer sudden and partial changes of temperature from the vicissitudes of night and day, and thus incessantly generate the circumstances which cause precipitation. It is evident that snow-

clad mountains, from the constancy of their temperature, will serve much less perfectly than those whose sides are bare, as nuclei for precipitating the atmospheric humidity; and that, in temperate climes, the rains will be more abundant on all mountains in summer than in winter. But though more rain falls in mountainous than in level countries, the depth is in all cases greater at the bottom of a mountain than at the top, and close to the surface of the ground than at any distance above it.

In the torrid zone, a small thick rain falls every day on that side of the equator on which the sun is, but generally intermits during the night. When it ceases in the one hemisphere, it commences in the other, and is nearly perpetual in a zone of two or three degrees in breadth, which separates the two systems. When the rains begin, the heat increases, and the trade wind subsides. Yet, even in the torrid zone, there are tracts where rain seldom or never falls, such as the Sahara of Africa, the low coasts of Caraccas, and the desert shore of Peru, between 15° and 30° of south latitude. In many parts there are two wet and two dry seasons in the year; and in some regions, from the effect of mountain ranges and peculiar winds, places under the same parallel have their wet and dry seasons at opposite periods. Though the annual depth of rain is greatest within the tropics, the number of rainy days follows an inverse order, and diminishes as we advance from high latitudes to the torrid zone. More rain falls in summer than in winter in all latitudes; but in the temperate zones the rains of winter are more frequent than those of summer, though less in quantity.

Mr. Dalton reckons the annual deposit of water in England to be 31 inches of rain, and five of dew. His estimate is perhaps rather high. The distribution of the rain through the different seasons is so much affected by local circumstances, that it is difficult to ascertain the mean result. In general, the fall seems to be least in spring, and greatest in autumn, and less in the six winter months than in the summer. The following table affords an interesting view of the connection between the phenomena of wind and rain in this country. It gives, for one year (1775) the number of days each wind prevailed at London; the quantity of rain that fell during the prevalence of that wind; and the humidity of the winds, or the relative quantity of moisture which each would deposit in the same space of time.

Winds.	*Days.*	*Rain.*	*Humidity.*	*Winds.*	*Days.*	*Rain.*	*Humidity.*
N.	22½	0.327	11	N. W.	39½	2.391	48
S.	21½	0.251	9	S. E.	32½	0.944	22
E.	11	0.168	12	N. E.	72	2.148	23
W.	18½	1.907	82	S. W.	148	18.975	100

The whole quantity of rain for that year was 27.11 inches; of which it will be observed that two-thirds fell with the south-west wind. The prevailing winds are the south-west and the north-east, the primary winds of our hemisphere. The least frequent are the east and the west. The south and the north winds are the driest, and the south-west and the west the most humid, as might be expected.

The formation of snow and hail is owing to the cold of the upper atmosphere. The formation of dews proceeds from the cooling of the earth's surface by *radiation*, which causes the deposition and frequent freezing of moisture. The colds of India, Persia, and other countries of clear skies, spring also from radiation. See, on this subject, Leslie's various Essays, and also the Treatise on Dew by Dr. Wells.

II. We have now arrived at the subject of *Climate*, which, although dependent also on other causes, is so dependent on the atmospherical actions above explained, that it cannot be properly treated under any other section of physical geography.

The first and chief cause of the more general differences of climate is astronomical, viz. the position of the different zones of the earth in regard of the sun's place. So far as this is concerned, however, we obtain only a few very vague determinations for the distribution of sea and land. The elevation, &c. of countries frequently compensate for unfortunate *astronomical* position. It would require many tables to present all the effects of this astronomical position, with reference to the relative light and heat it infers at different seasons of the year; nor are these necessary here. One feature, however, of climate arising from the position of places upon the globe ought to be tabulated, viz. the duration of the longest day in different latitudes, as greatly influencing vegetation. The following table exhibits this. It will be noticed, that beyond latitude 66° 32′, the day can no longer be reckoned by *hours*, and that beyond latitude 67° 23′ it is reckoned by *months*: —

TABLE OF CLIMATES.

Climates of Half an Hour.	Longest Day.		Latitude.		Extent of Climates.		Climates of Half an Hour.	Longest Day.		Latitude.		Extent of Climates.	
Their Number.	Hours.	Min.	Deg.	Min.	Deg.	Min.	Their Number.	Hours.	Min.	Deg.	Min.	Deg.	Min.
0	12	0	0	0	0	0	12	18	0	58	25	1	49
1	12	30	8	34	8	34	13	18	30	59	57	1	32
2	13	0	16	43	8	9	14	19	0	61	16	1	19
3	13	30	24	10	7	27	15	19	30	62	24	1	8
4	14	0	30	46	6	46	16	20	0	63	20	0	56
5	14	30	36	28	5	42	17	20	30	64	8	0	48
6	15	0	41	21	4	53	18	21	0	64	48	0	40
7	15	30	45	29	4	8	19	21	30	65	20	0	32
8	16	0	48	59	3	30	20	22	0	65	46	0	26
9	16	30	51	57	2	58	21	22	30	66	6	0	20
10	17	0	54	28	2	31	22	23	0	66	20	0	14
11	17	30	56	36	2	8	23	23	30	66	28	0	8
							24	24	0	66	32	0	4

Climate of Months.	Longest Day.		Latitude.		Extent of Climates.		Climate of Months.	Longest Day.		Latitude.		Extent of Climates.	
Their Number.	Months.		Deg.	Min.	Deg.	Min.	Their Number.	Months.		Deg.	Min.	Deg.	Min.
1	1		67	23	0	51	4	4		78	31	4	52
2	2		69	10	2	27	5	5		84	5	5	34
3	3		73	39	3	49	6	6		90	0	5	55

N. B.—We do not in these Tables take any notice of the effects of the refraction, which increases the duration of the day, particularly towards the poles. Under the pole itself the refraction alone, independent of the twilight, increases the day, which is six months long, 67 hours.

The *Physical Climate* of a country depends on the distance of the latter from the equator and its level above the sea; and, in a smaller degree, on the nature of the surface, the abundance or scarcity of humidity, the proximity or remoteness of the sea, of lakes, of mountains, of arid or frozen plains, and perhaps also it is affected by what has been termed the internal heat of the earth.

The mean temperature of the earth at the equator, which is pretty uniform under every meridian, is estimated, by Humboldt, at 81°.5 of Fahrenheit's scale. The decrease of heat, *as we recede from the equator*, on either side, follows different laws in the two hemispheres, and in the same hemisphere under different meridians. On the west coast of Europe, about the meridians of London and Paris, the cold increases much more slowly as we proceed northward from the equator, than in any other part of the world. In North America, at the meridian of 80° or 90° west from London, and in Asia at the same distance east, the increase of cold is much more rapid as we approach the pole. In the northern hemisphere, the cold is generally greatest on the east side of both the old and new continents, and least on the west. Humboldt has generalised this fact, and inferred, that all continents and large islands are warmer on the west side than the east. The following table, extracted from Humboldt's essay, exhibits the different gradations of the mean annual temperatnre in Western Europe and North America, continuing the scale to the equator: —

Latitude.	*Old World.*	*New World.*	*Difference.*
0	81°.5	81°.5	0
20	77 .9	77 .9	0
30	70 .7	67 .1	3.6
40	63 .5	54 .5	9.
50	50 .9	38 .3	12.6
60	41 .0	25 .0	16.
70	33 .0	0 .0	33

We have few observations for the east coast of Asia; but the following shows that the climate of this region approaches to that of Eastern America rather than Western Europe: —

Europe.		*Asia.*		*America.*	
Naples,	Lat. 41°. Temp. 63 .3	Pekin,	Lat. 40°. Temp. 54 .8	Philadelphia,	Lat. 40° Temp. 53 .4

Thus the mean annual temperature of North America is 9° lower than that of Western Europe at the latitude of 40°, 16° lower at latitude 60°, and 33° lower at lati-

tude 70°; a similar distance obtains between the climates of Western Europe and Eastern Asia. By comparing places under the same parallel, we find that this change is not sudden, but progressive. Petersburgh, on the same parallel with Upsal, is 3° colder, and Moscow is 5° colder than Copenhagen. The annual temperature of West Greenland in latitude 70°, which is 17° or 18°, according to Sir C. Gieseké, is very nearly the mean between that of the North Cape and Melville Island, as its intermediate situation would lead us to expect. These differences are rendered more sensible when we connect the places having the same annual temperature by lines, which Humboldt has named isothermal lines. Thus the isothermal line of 59° (Fahrenheit) passes along the latitude of 43° in Europe, but descends to latitude 36° in America. The isothermal line of 41° passes from the latitude of 60° in Europe, to that of 48° in America, showing that the same annual temperature which is found at the 60th parallel on the eastern side of the Atlantic, is only found at 12° further south on its western shores. The western coast of North America again is warmer than the east; and hence if we were to trace the isothermal lines round the northern hemisphere, they would all have concave summits at the east sides of Asia and America, and convex summits at the west sides of America and Europe.

The difference of mean temperature between summer and winter (reckoning each to consist of three months) is nothing at the equator, and constantly increases as we approach the pole, as shown in the following table: —

	Latitude.	MEAN TEMPERATURE — *Of Winter.*	*Of Summer.*	*Difference.*
Algiers,	37°	61°.5	80°.2	18°.7
Buda,	47½	34 .0	70 .5	36 .5
Upsal,	60	25 .0	60 .2	35 .2

The extreme difference of the seasons is smaller under the warm meridians of Western Europe than anywhere else, and seems to be greatest where the mean annual temperature is lowest, — near the east coast of Asia and America: —

	Latitude.	*Winter.*	*Summer.*	*Difference.*
Copenhagen,	55½°	30°.7	62°.6	31°.9
Moscow,	55¾	10 .8	67 .1	56 .3
Rome,	42	45 .8	75 .2	29 .4
Pekin,	40	26 .4	82 .6	56 .2
New York,	41	29 .8	79 .2	49 .4

	Mean Annual Temperature.	*Winter.*	*Summer.*	*Difference.*
St. Malo,	54°	42°.3	66°.0	23°.7
New York,	54	29 .8	79 .2	49 .4

If we draw a line on the map in a north-east direction from Bourdeaux to Warsaw, and continue it till it strike the Wolga in latitude 55°, all the places situated under this line, at the same elevation, will have nearly the same summer temperature of 69° or 70° of Fahrenheit's scale. The lines of equal winter temperature decline in an opposite direction, and deviate much farther from the plane of the parallels. Thus a straight line drawn from Edinburgh to Milan, almost exactly at right angles to the line of equal summer temperatures, would pass over places, all of which, if equally elevated, would have nearly the same winter temperature of 37° or 38°. The other lines of equal summer and winter temperatures have a direction corresponding to these, but not exactly parallel.

On comparing the climate of the two hemispheres, we find that the southern is rather colder than the northern, but is more remarkably distinguished by the greater equality of its seasons. This last effect may obviously be referred to the influence of a greater surface of sea upon a smaller extent of land. In the southern hemisphere also, the temperature seems more uniform under different meridians. At Port Jackson, Buenos Ayres, and the Cape, all nearly under one parallel, the annual mean temperature is almost exactly the same.

The second general cause that affects the temperature of places is their *elevation above the level of the sea.* The formula in page 74 explains the law of this decrease of temperature according to elevation, and shows, in near consistency with fact, that as we ascend, the rate is not the same at different latitudes, nor uniform at the same place for equal successive altitudes.

At the equator, for instance, the thermometer is found to sink 10° in the first thousand yards of ascent, or 1° for 310 feet. In the next thousand yards it sinks no more

than 6°, or 1° for 524 feet. In the third and fourth stages, there is a remarkable acceleration. In the whole column of air to the limit of perpetual snow, at 15,965 feet of elevation, the decrease is 1° for 341 feet. In the temperate zone the atmospheric cold increases more rapidly. Observations made in the free regions of the air, may give different results from those which were made on the sides or summits of mountains. But generally in the temperate zone, of two adjacent places, if the one is 1000 yards higher than the other, it will have a climate 12° colder. For smaller heights the decrease is proportional. In the upper regions of the atmosphere, the difference between the heat of night and day, summer and winter, is smaller than at the surface of the earth. This law of decrease explains the extreme cold felt in the elevated plains of Siberia, and the mild temperature enjoyed in the torrid zone, on the table land of Mexico, the plateau of Pastos, and other high lands.

The subjoined table, calculated from the formula already referred to, gives the height of the line of congelation at different latitudes: —

Latitude.	*Mean Temperature at the Level of the Sea.*		*Height of Curve of Congelation.*	*Latitude.*	*Mean Temperature at the Level of the Sea.*		*Height of Curve of Congelation.*
	Centigrade.	*Fahrenheit.*	*Feet.*		*Centigrade.*	*Fahrenheit.*	*Feet.*
0	29°.00	84°.2	15207	46	13.°99	57.°2	7402
1	28.99	84.2	15203	47	13.49	56.3	7133
2	28.96	84.1	15189	48	12.98	55.4	6865
3	28.92	84.0	15167	49	12.43	54.5	6599
4	28.86	83.9	15135	50	11.98	53.6	6334
5	28.78	83.8	15095				
6	28.68	83.6	15047	51	11.49	52.7	6070
7	28.57	83.4	14989	52	10.99	51.8	5808
8	28.44	83.2	14923	53	10.50	50.9	5548
9	28.29	82.9	14848	54	10.02	50.0	5290
10	28.13	82.6	14764	55	9.54	49.2	5034
				56	9.07	48.3	4782
11	27.94	82.3	14672	57	8.60	47.5	4534
12	27.75	82.0	14571	58	8.14	46.6	4291
13	27.53	81.6	14463	59	7.69	45.8	4052
14	27.30	81.1	14345	60	7.25	45.0	3818
15	27.06	80.7	14220				
16	26.80	80.2	14087	61	6.82	44.3	3589
17	26.52	79.7	13947	62	6.39	43.5	3365
18	26.23	79.2	13798	63	5.98	42.8	3145
19	25.93	78.	13642	64	5.57	42.0	2930
20	25.61	78.1	13478	65	5.18	41.3	2722
				66	4.80	40.6	2520
21	25.28	77.5	13308	67	4.43	40.0	2325
22	24.93	76.9	13131	68	4.07	39.3	2136
23	24.57	76.2	12946	69	3.72	38.7	1953
24	24.20	75.6	12755	70	3.39	38.1	1778
25	23.82	74.9	12557				
26	23.43	74.2	12354	71	3.07	37.5	1611
27	23.02	73.6	12145	72	2.77	37.0	1451
28	22.61	72.7	11930	73	2.48	36.5	1298
29	22.18	71.9	11710	74	2.20	36.0	1153
30	21.75	71.1	11484	75	1.94	35.5	1016
				76	1.70	35.1	887
31	21.31	70.3	11253	77	1.47	34.6	767
32	20.86	69.5	11018	78	1.25	34.2	656
33	20.40	68.7	10778	79	1.06	33.9	552
34	19.93	67.9	10534	80	.87	33.6	457
35	19.46	67.0	10287				
36	18.98	66.2	10036	81	.71	33.3	371
37	18.50	65.3	9781	82	.56	33.1	294
38	18.01	64.4	9523	83	.43	32.8	226
39	17.51	63.5	9263	84	.32	32.6	167
40	17.02	62.6	9001	85	.22	32.4	117
				86	.14	32.3	76
41	16.52	61.7	8738	87	.08	32.2	44
42	16.02	60.8	8473	88	.04	32.1	20
43	15.51	59.9	8206	89	.01	32.0	5
44	15.01	59.0	7939	90	·00	32.0	0
45	14.50	58.1	7671				

The temperature of countries is also affected by the *proximity of the sea*, and the *nature of the adjacent land*. The extremes of temperature are always comparatively little felt in small islands, remote from continents. In the United States, intense cold is experienced as often as the wind blows from the frozen plains round Hudson's Bay. From high mountains, gusts of cold wind, called *snow winds* by mariners, rush down and cool the circumjacent plains. At Calabozzo, in Venezuela, the temperature, which was from 87° to 90° in March, rose to 104° or 105°, whenever the wind blew from the parched and dusty surface of the Llanos, or great plains. The heat accumu-

lates to an astonishing degree, when the wind passes over extensive deserts of fine and almost impalpable sand, which rises in the air, and hangs over the surface like a fog, or mounts in whirling columns to a great height, mixing its burning particles with the mass of the atmosphere, and communicating to it an intolerable heat. In Europe, where the proximity of the sea cools every part of the surface by the agency of the winds, the accumulation of heat never proceeds so far as in Asia and Africa. Even in low plains, sheltered on the north, the temperature scarcely ever exceeds 100°: but at Bagdad and at Bushire, where the south wind arrives heated by the burning sands of Arabia, the thermometer sometimes stands at 120°, or 125°; and on the west coast of Africa, where similar causes operate, it is said to rise to 130°. Perhaps the hottest summer climate in the world is to be found in the western parts of the Sahara of Africa, under the northern tropic, where the winds blow over a zone of sandy plains 4000 miles in breadth, unbroken by any considerable mountains, or by any surface of water except the narrow inlet of the Red Sea. At the sametime, it is possible that a much narrower surface than this may suffice to communicate the maximum effect of the solar heat to the atmosphere, and the actual heat generated may depend more upon the nature of the surface and its low elevation, than upon its extent.

It appears that within the tropics seas have very little effect in tempering the accumulating heat of the land, when situated to the westward of a continent, but a great effect when situated to the eastward. In the *steppes* of Caraccas, which are open to the sea on the east, the heat rarely exceeds 99°, but even in the wooded regions of Senegambia and Guinea, much nearer the coast, it rises to 130°. In the temperate zones, on the other hand, it is clear that the sea exerts its influence in a direction precisely contrary. When the land lies to the eastward, the sea mitigates the extremes of heat and cold very much; when to the westward very little. This is abundantly proved by the difference of temperature between the east and west coasts of the two continents. Now, the sea can exert very little influence over the temperature of the land, except through the agency of the atmospheric currents; and the phenomena in both cases seem to be accounted for by the prevailing direction of the winds. Within the tropics, these are almost constantly from the east; but from the tropics to the latitude of 60° north (and probably much farther), the prevailing winds are from the west. Within the torrid zone, therefore, we should expect to find the extreme summer heat constantly accumulating from the east side of continents and islands to the west; but in the temperate zones, the extremes both of heat and cold will as regularly increase from the west to the east. This is found to be the case, and whatever other causes may be conjoined with those now assigned, there can be no doubt that the latter have really a great influence.

The temperature of each zone has such a correspondence with the amount of the solar impressions, as to lead to the inference, that the heat of the globe is entirely derived *from the sun;* and Professor Leslie has calculated, that, upon this hypothesis, the mean heat of the interior ought to be 66°.8. Humboldt has ascertained, however, that, in latitudes above 45°, the mean heat of springs and caves generally exceeds that of the atmosphere. The difference, which amounts to 6° or 7° at the parallel of 70°, he ascribes to the covering of snow in the higher latitudes, which prevents the loss of heat during the winter months by radiation, or the contact of cold winds. But there are facts which indicate that this heat may be derived from *another source.* To say nothing of volcanoes, we have hot springs in all parts of the world, at all temperatures below boiling water; and evidence still less equivocal is afforded by the high temperature of deep mines. The following are examples: —

At Giromagny, in the Vosges, annual temperature at surface, 49°; at 110 yards depth, 53°.6; at 336 yards, 65°.8; at 472 yards, 74°.6.

In Saxony, in four of the deepest mines, annual temperature at surface, 46°.4; at 170 to 200 yards depth, 54°.5; at 280 yards, 58°; at 360 yards, 62°.6.

In the coal mine of Killingworth, the deepest in Britain, annual temperature at surface, 48°; at 300 yards, 70°, at 400 yards, 77°. In seven others of the deepest coal mines in Britain, a corresponding gradation was observed.

In these British mines, the increment of temperature is about 1° for 15 yards of descent. In the Vosges, it is about 1° for 20 yards, and in Saxony, 1° for 22 yards. Taking 20 yards as a mean, if the increase follows the same arithmetical ratio to a considerable depth, we should find the temperature of the Bath waters (116°) at 1320 yards below the surface, and that of boiling water at 3300 yards, or nearly two miles. The frequency of hot springs from the 80° to 120°, the rarity of those that approach the boiling point, and the constancy of temperature in them all, are circumstances remarkably consistent with this hypothesis. The facts strongly support three conclu-

sions; 1*st*, That the heat of an interior shell of the earth is greater than the superficial shell: 2*d*, That this heat augments progressively as we descend towards this region, in a ratio bearing some relation to the depth; 3*d*, That, even at moderate depths, this heat is greater than the mean heat of the globe ought to be, if entirely derived from the sun. The heat of such an interior mass must be constantly diffusing itself towards the surface; and at the surface it may be kept down, so as to affect the temperature derived from the solar action very feebly, by the greater or less rapidity of its dissipation. But as it is very improbable that it should be diffused with perfect equality round the whole exterior shell of the globe, it may be the true source of some of those anomalies of climate (such as the discrepancy in the annual heat under the same parallel) which cannot be easily referred to other known causes.*

III. *Meteorological Phenomena*, or those supplementary phenomena not apparently belonging to the peculiar constitution of the atmosphere, which are partly manifested there, are very various; — we shall now endeavour to arrange them into classes.

1. *Optical phenomena.* The optical appearances of the sky are striking and manifold. When the rays of the sun strike upon a cloud, they are copiously reflected, but partly absorbed by the minute suspended globules. In working their progress through the mass of vapour, they suffer a great diminution from the multiplied acts of absorption. The quantity of light thus finally detained depends on the density of the cloud, and its thickness. But the portion which penetrates through the nebulous medium is always much less than what traverses an equal body of air. In extreme cases, perhaps, the solar beams will suffer greater defalcation by repeated repercussions within a congregated cloud, than from passing through fifty times the same extent of a clear aërial expanse. Hence such clouds always appear dark and black, by their scanty transmitted light. Whiteness, being produced by the copious emission of intermingled rays, can belong only to very thin clouds. The depth of shade indicates the mass of floating vapour. Owing to the excessive minuteness of the aqueous globules, the particles of light are only reflected or absorbed at their external surface, without entering them. But when they collect into large drops, the luminous pencil which strikes at a certain angle converges by refraction to a point of the posterior surface, and, after suffering one or more interior reflections, it emerges dissected into its primitive colours. Hence the glorious vision of the rainbow, which was reduced to mathematical calculation by Descartes, but only received its complete explication from the optical discoveries of Newton. The phenomena occur whenever the sun shines upon the falling drops of rain behind the spectator, the coloured arch being a portion of a circle whose centre is a point in the sky directly opposite to the sun. The primary or interior bow is formed by a single reflection, and lies 45° degrees beyond that centre; but the secondary or superior bow, produced by a double reflection, appears with inverted tints at the distance of 56°. A ternary bow may exist, but being so extremely faint from the repeated reflections, it is scarcely ever perceived. It hence follows, that rainbows are only visible when the altitude of the sun is below 45° and 56°. In summer, accordingly, they are not seen in this climate about the middle of the day. For the same reason, they generally appear less than a semicircle; but viewed from the top of a spire, or any lofty pinnacle, they embrace nearly the whole circumference. Lunar rainbows may be frequently observed, only the faintness of their colours makes them far less conspicuous. The coloured rings or *halos* which are often seen surrounding the moon and sun, are evidently occasioned by very thin vapour diffused through the atmosphere. They are supposed chiefly to encircle the moon; but, in this climate, hardly a day passes with light fleckered clouds, when at least portions of halos may not be perceived near the sun. It is only necessary to remove the glare of light which makes the delicate colours appear white. Thus, if we examine the reflection from a smooth surface of water, we shall perceive that the sun gilds the fleecy clouds with segments of beautifully coloured rings. This effect is still more distinctly seen if the rays from a hazy or mottled sky be received upon a sheet of white paper, held before a small hole in the window-shutter of a dark room. But even when the sun shines from an azure firmanent, circles of the richest tints may be produced by experiment. Holding a hot poker below, and a little before, the small hole of the shutter, throw a few drops of water upon it, and the sun will be painted

* As nearly the whole of the preceding view of climate has been taken from Humboldt's excellent *Essay on Isothermal Lines, and the Distribution of Heat over the Globe*, particular references were not thought necessary. The English translation, given in the *Edinburgh Philosophical Journal*, No. 5-9, has been consulted.

upon the paper like the glowing radiations of the *passion-flower*. The appearance is exactly similar to what the traveller, in awakening from a short slumber, perceives, in a winter's morning, on opening his wearied eyes to a burning candle — concentric rings of violet, green, yellow, and red. The explication usually given of the cause of halos, and also that proposed by Newton himself, is inadmissible; since it would confine them, like the rainbows, to certain definite limits, whereas they appear with every possible degree of extension. The origin of halos must be sought in the *deflection* of light, or that property of the rays to bend and divide as they pass near the edge of a body. Thus the light admitted through a very narrow slit in a card, or a bit of tinfoil, spreads into bright coloured fringes. The finer also is the slit, the broader are the fringes. A similar appearance is obtained by looking at the elongated flame of a candle through the delicate fibres of a feather, or even through the streaks of grease rubbed by the finger along a piece of glass. But if a very small round hole be substituted for the slit, the fringes will change into coloured rings. Thus, if a piece of tinfoil, punctured with the point of a needle, be held close to the eye, the sun will appear through it surrounded by a halo very near his disc, but spreading more in proportion as the hole is contracted. It may be stated, as an approximation, that the globules of the diffuse vapour which, by a similar *exterior* deflection of the solar rays, occasion the appearance of coloured circles about the sun and moon, vary from the 5000th to the 50,000th part of an inch in diameter. When the halo approaches nearest to the luminous body, the largest globules are floating, and therefore the atmosphere is surcharged with humidity. Hence the justness of the vulgar remark, that a dense halo close to the moon portends rain. The late Dr. Thomas Young gave perhaps the only true account of the origin of the *parhelia* or *mock suns*, which are frequently seen in the arctic regions during certain dispositions of the atmosphere. This gorgeous appearance of intersecting luminous arches, studded with opposite and transverse images of the sun, he ascribes to the combined reflections of the rays from the natural facets of the snowy *spiculæ* floating abundantly in the air. Another most remarkable optical deception occurs in a peculiar state of the atmosphere on the verge of the horizon in various countries, and especially in the warmer climates, whether on the level plains, or on the margin of rivers or lakes, and near the sea-shore. In such situations, the remote objects often appear with extraordinary elevation, and in double or inverted images. This singular phenomenon is obviously caused by the irregular refractions which the rays of light occasionally suffer by passing through the different strata of the lower atmosphere. When the effect is confined to the apparent elevation of an object, our seamen call it *looming*; but if inverted images be formed, the French and Italians give to this play of vision the appellations of *mirage* and *fata morgana*.

2. *Electric phenomena.* Of all *igneous* meteors, *lightning* unquestionably occupies the first rank. It is universally known as the effect of electricity; the theory of which must be studied in philosophical treatises. The electric *fluid*, as it is termed, appears to pervade all nature; its presence and influence has been detected during the phenomena of rain, snow, hail, &c. in the clouds, during vegetation, and among the strata of the interior of the earth. On a disturbance of its equable diffusion, or state of equilibrium, the bodies unequally affected tend to return to that condition by a discharge, which appears in the form of a spark or flash of lightning, and the violence of which is indicated by a detonation often echoed and re-echoed among the piles of clouds. Sometimes we observe the flash descending from the clouds to the earth; at other times it ascends from the earth to the affected region of the air. This flash, which is attracted and conducted by metals and moist bodies in preference to other substances, commits ravages, which, from our inability to observe them with coolness, still remain partially obscure: here the lightning kindles rapid and devouring flames; there it bends and shivers the objects it meets with. Sometimes it instantaneously deprives animals of life, and sometimes passes over the clothes without injuring the person. A kind of periodical flux and reflux has been observed in the electrical fluid in the atmosphere. In summer, when the earth is dry and the day warm, droughty, and severe, the atmospheric electricity increases from sunrise till mid-day, when it arrives at a *maximum*; then it remains stationary for a couple of hours, and afterwards diminishes until the fall of the dew. Towards midnight it revives, to be again almost entirely extinguished. In winter, the maximum of electricity is at eight o'clock in the morning and at eight o'clock in the evening; it is weaker during the day. Electrical phenomena are more prevalent in some quarters of the globe than in others. Towards the poles, thunder is rarely heard, and only as a weak decrepitation; whereas at the equator there is a vast extent both of land and sea where such storms almost constantly prevail. Notwithstanding the calamities which these storms frequently

occasion, and which the thunder-rod cannot infallibly prevent, they are not unproductive of benefit. They diffuse freshness through an atmosphere formerly confined and sultry; the plants resume their lively green, the flowers raise their drooping heads when their thirst has been quenched by the rain; the crops and fruit, penetrated by a new warmth, ripen more rapidly, and man adores anew the Great Being whose power has been displayed.

3. *Meteors.* Of meteors, properly so called, there are several classes.

Ignes fatui, or those lights which flutter at night on the surface of marshes, over churchyards and fields of battle, arise from the spontaneous ignition of a gas composed of hydrogen and phosphorus, which is emitted by animal matter in a state of putrefaction. This gas always inflames on its first contact with the oxygen of the atmosphere.

In the farther regions of the air, shines the *aurora borealis*, that brilliant light whose aspects belong rather to the painter and the poet, than to the rigorous and sober descriptions of science. In our European countries the aurora appears uniformly in the north, inclining generally somewhat to the west; in Greenland, however, it is sometimes perceived towards the south, and in the other hemisphere it shines with a feeble lustre in the direction of the south pole. In latitudes north of 50°, it commences generally three or four hours after sunset, and is preceded by a sombre cloud nearly resembling the segment of a circle, of which the horizon forms the cord. This segment seen at Upsal, for instance, is of a deep black, whilst in Lapland it is greyish, and sometimes invisible. The circumference of the cloud very soon appears bordered with a whitish light, which sometimes seems to fade gently away. Most frequently the dark segment opens in chinks, whence issue streams and rays of light of a yellow, a rose, a purple, or a sea-green colour. A general movement agitates all the cloudy and enlightened space; rays, becoming more and more bright, shoot across each other, like lightning flashing in the midst of effulgent splendour; by degrees there is formed in the zenith a luminous crown, which seems to be the central point of all the motions of the luminous matter. After having occupied, for the space of an hour or two, almost the entire expanse of the heavens, the phenomenon contracts itself first on the southern side, afterwards on the west and the east, and finally disappears towards the north, fading before the rising sun. The description now given applies to the aurora in its full magnificence; the farther we retire from the pole, the less distinctly are these various aspects visible. The *situation* of auroral phenomena is unquestionably the higher regions of the atmosphere; their *cause* is still involved in that obscurity which shrouds all departments of meteorology.

Still more remote is the region of the *zodiacal light*. This grand phenomenon presents itself after sunset, under the appearance of a serene whitish clearness of a lenticular form, having its face turned towards the sun, and its axis in the zodiac. It is seen constantly at the equator, but in other zones only in the most favourable seasons; in our latitudes it chiefly appears about March and April. Many hypotheses have been started in regard of this light, but the most probable is, that it is a hazy mist surrounding the sun, of the nature of the halo around the nebulous stars; and if that halo be, as is now commonly believed, connected with the most extraordinary phenomenon in the heavens — diffused nebulosities, the zodiacal light may yet yield important illustrations of the whole planetary cosmogony.

Falling Stars, or *Meteorites*, appear to lead us into spheres still more distant, and far wider speculation. We see them in the form of small globes traversing the vault of heaven in curves, and they occur on any clear night. Until lately, these objects were accounted purely atmospherical phenomena, and described as the inflammation of hydrogen gas, &c.; nor did the fact of the actual fall of *stones*, in some instances, deter speculators from this solution, farther than by inducing some of them to place the meteors which produced stones into a separate class, and to refer them to the volcanoes of the moon. Since the year 1833, however, new views have opened. Various observations concur in shewing that towards the middle, or 13th of November, at a small distance from the stars β and γ of the constellation Leo, a remarkable quantity, amounting to a *shower* of shooting meteors, are produced. Now the periodical occurrence of this phenomenon, at a definitive season of the year, seems to connect it with the earth's position in its orbit; in other words, it converts such meteors into *astronomical* phenomena. The celebrated ARAGO supposes that a train of nebulous matter, containing millions of small globes, may sweep around the sun, and that the orbits of that matter and of the earth cross each other at the point or season referred to. It is far from unlikely that the cause will ultimately be found in some such grand phenomenon; but it would be premature to dogmatize until the activity of observers has fully cleared up all question as to *fact*.

This is the fittest place in which we can refer to *terrestrial magnetism*. Although remarkable relations have recently been established between the electric and magnetic agencies, the real nature of the phenomenon now alluded to is very little understood; and it is perhaps that portion of physical science in regard of which observation and experiment are most urgently required. The polarity of the magnetic needle, and the fact of its variation, have long been known, and of vital importance to mariners. We have still no adequate theory of these variations, which seem to have great secular periods; but multiplied observations have given us a tolerably exact knowledge of their existing condition, of which maps have been published. Besides the variation, the needle has also considerable diurnal oscillations. It were needless in a work like this to enter farther on such a subject; though we cannot avoid remarking, that the discoveries in this part of philosophy in regard of the variations and oscillatory movements referred to, will certainly conduct to unexpected truths concerning the physical structure of the crust of our globe.

CHAPTER IV.

PHYSICAL GEOGRAPHY, IN RELATION TO ORGANIZED BEINGS; OR THE GEOGRAPHICAL DISTRIBUTION OF VEGETABLES, OF ANIMALS, AND OF THE HUMAN RACE.

§ 1. *On the Geographical Distribution of Vegetables.*

HAVING examined the solid, liquid, and aeriform parts of the terrestrial globe, we shall now proceed to the consideration of those innumerable living beings which cover its surface. In doing so, we shall in the first place notice vegetable productions, both on account of their intimate connection with the soil, and the abundance in which they are produced. It is for the botanist to examine in detail the treasures of the vegetable kingdom,—the business of the physical geographer is only to mark its general arrangements. In the following observations, we propose to treat of botanical geography in its more enlarged and general sense, and shall afterwards, when speaking of different countries, point out the most important productions of their respective regions.

Vegetation embraces the whole extent of the globe, from one pole to the other, from the summit of the Andes, where the lichen creeps over the hardest rocks, to the very bosom of the ocean, where we meet with floating meadows of sea-weeds. Heat and cold, light and shade, fertile lands and desert plains, every place and every temperature, has its own peculiar vegetation. Palms, tree-ferns, and the parasitical orchideous plants, are confined to the tropics; cruciferous and umbelliferous plants are almost exclusively found in temperate regions; while the coniferous, and many of the amentaceous tribes, flourish in more northern countries. Plants belonging to the cryptogamous class grow even upon the dark vaults of caverns, and upon the walls of the deepest mines. The temperature of the air seems to be the chief agent in limiting the range of any vegetable species. Hence the scale of atmospherical temperature serves as a scale for the progress of vegetation. In the burning climate of the torrid zone, we have only to ascend the mountains to enjoy the fruits and flowers of temperate regions. Tournefort found at the foot of Mount Ararat the ordinary plants of Armenia; a little way up, those of Italy; higher again, those which grow about Paris; afterwards the Swedish plants; and higher still, those of Lapland. Forster saw several of the plants of the Alps on the mountains of Terra del Fuego. While the vallies of the Andes are adorned with bananas and palm-trees, the more elevated regions of that chain are covered with oaks, firs, barberries, and a number of genera common in the north of Europe.

The degree of heat and light necessary for the growth of different vegetables is very various. Some plants of the confervæ tribe, as a species of green laver, live in hot springs, at the temperature of boiling water; whilst others, such as the red snow plant *(protococcus nivalis)*, vegetate amidst the perpetual snow of high mountains, or of the Arctic regions. Numerous cryptogamous plants thrive in situations where the rays of the sun never penetrate. Vigorous beech-forests are found covering the slopes of the Himalaya chain, at a height considerably greater than that of the summit of Finsterhorn, and there also shrubs grow in situations more elevated than the top of Mont Blanc; whilst, on the other hand, numerous sea-weeds send forth their fronds from the very abysses of the ocean. The difference of pressure, temperature, and light, in these instances, must be very great. The absence of moisture seems to oppose the most formidable obstacle to the growth of plants. In confirmation of this, we have only to look to those sandy deserts under the equator and towards the pole, where scarcely a drop of rain falls, and where not even a blade of grass can be seen. The mountains of the torrid zone, present often, from their base to their summit, the plants which are met with from the equator to the poles. We have been able also to cultivate, in our stoves, according to the temperature, the degree of moisture, and the nature of the soil which we employ, a vast number of plants indigenous in all climates. The geographical differences which vegetables present, depend, then, almost entirely on the different degrees of heat, light, and moisture, which they receive, as well as on the nature of the soil whence they derive nourishment, and the influence of various atmospherical phenomena which are constantly occurring. There exists, however, a great number of plants, such as chiccory, wild sorrel, and cresses, which ac-

commodate themselves to all climates and to all localities, extending from Siberia and the frozen shores of Hudson's Bay, to those blissful islands which are scattered over the Pacific Ocean.

The dissemination of the seeds of plants over the surface of the earth is effected by four causes; water, wind, animals and man. The first of these is chiefly concerned in the propagation of aquatic plants, and those found on the sea-shore; the second, in the dissemination of cryptogamous species; and the two last, in the distribution of phænogamous plants in general. Plants may be naturalized wherever the temperature and other atmospheric phenomena are similar to those of the countries in which they are indigenous. We must not, however, allow too much latitude to the operation of these dispersing causes. The pretended migrations of plants have been greatly exaggerated. It has been stated, for example, that Europe received wheat and barley from Tartary, the walnut-tree from Persia, the olive from Syria, and the vine from the borders of the Caspian Sea; in short, historical proofs have been accumulated to show that almost all our useful plants have been brought from Asia. The observations of the ancients, however, on this subject refer only to the *cultivation* of a plant, and not to its origin. Lucullus, without doubt, was the first who brought from Cerasus, in Pontus, the cherry-trees since cultivated in Italy; but in relating this fact, Pliny tells us, that Lusitanian cherries were the most esteemed in Belgic Gaul, and that Macedonia produced a particular kind. He would not have spoken in this manner, had the cherry-trees of Macedonia and Lusitania been propagated from those of Pontus. The same author, however, seems to allow that the vine was indigenous to Gaul. Ancient traditions concur in ascribing the first cultivation of wheat to Sicily or to Attica. A kind of rye, known under the Celtic name of *arinca*, was a native of Gaul. These examples are sufficient to show that some of the farinaceous plants may be considered as indigenous in Europe.

The migrations of man, however, have had a wonderful influence on the geographical extension of plants. By him the coffee-tree has been carried from Arabia to the West Indies, and the potato from America to Europe. The accidental introduction of seeds into a bale of merchandise, has been the means of spreading many plants. In this way, some of the vegetable productions of Brazil have been transplanted into Portugal, and perhaps afterwards conveyed thence to Britain. In the dissemination of plants, there are several peculiarities which are easily accounted for. Some plants appear to live in society, and occupy exclusively large tracts of ground, from which they banish all other vegetables. Others are confined to one side of our planet. This is more especially the case with the species of the genus erica or heath, which extend from the Pole to the Cape of Good Hope, over a surface very narrow compared to its length. Some plants are propagated in the direction of the longitudes, and do not extend either to the right or the left. Thus, the two-coloured phalangium (*Phalangium bicolor*), according to Mirbel, begins to appear on the plains of Algiers, passes into Spain, crosses the Pyrenees, and ends in Brittany. The Irish menziesia (*Menziesia polifolia*), is found in Portugal, the south-western extremity of France, and in Ireland. The Pyrenean ramonda, (*Ramonda pyrenaica*), follows the valleys in the Pyrenees, which run from north to south, and there is not a single specimen of it to be found in the lateral valleys.

We see at other times singular leaps in the distribution of plants. The oak, the wild-nut, and the apple-tree, which are common in Europe, disappear towards the Uralian Mountains, and are not met with from the Tobol to Daouria. The two first of these trees, however, reappear suddenly on the banks of the Argoun and the Amour, and the last occurs anew in the Aleutian Islands.

Botanical geography is not yet in a sufficiently advanced state, to enable us to give an accurate account of the number of species, genera, and families of plants in the different regions of the globe. Willdenow, in his *Species Plantarum*, describes nearly 20,000 species of phænogamous plants, and if to these we add 7000 or 8000 cyptogamous plants which have been described, and 25,000 or 30,000 different species which have been recently discovered, we shall find that the number of plants at present known amounts to nearly 60,000.

Humboldt and Brown have given the following account of the numerical distribution of plants in different countries. In Europe, 7000; in the temperate regions of Asia, 1500; in the warmer regions of Asia and the neighbouring islands, 4500; in Africa, 3000; in North America, 4000; in South America, 13,000; in New Holland, and the islands of the South Sea, 5000. To these must be added numerous marine plants which are as yet little known, and a great variety of vegetable species which have been discovered since Humboldt and Brown's calculation was made. The view

which has been given, however, sufficiently shows the small extent of our knowledge in regard to this subject; for Europe, which presents a surface much smaller than that of many of the countries mentioned, and which cannot boast of the same luxuriant vegetation as is met with in the tropics, but which has been traversed by botanists in all directions and for many years, appears, in this arithmetical distribution, to be richer than Africa and Asia, the extent of which is twice and four times as great as that of Europe. An obstacle to finding the correct number of species, is the want of correspondence among botanists as to the meaning of the terms *species* and *varieties*. Some have multiplied the number of species to an unreasonable amount, by recognising as such all plants which do not present rigorously the characters of the types described by preceding authors; others, falling into the opposite extreme, have united plants which are separated by most botanists, and have thus reduced their real number, without any philosophical reason. If we reflect that the vast continents of Asia and America have not yet been fully explored by botanists, and that the whole of the interior of Africa, of Australia, and the large islands of Oceanica, is as yet unknown alike to the geographer and the naturalist, we can easily suppose that the number of species existing on the globe may amount to nearly double those already known.

The number of known vegetable families differs in different latitudes and in different places. In going from the poles to the equator, we find the number of the *Malvaceæ* or mallow tribe, *Euphorbiaceæ* or euphorbium tribe (including the spurge, castor and croton oil plants, &c.) and *Compositæ* or compound flowers, such as dandelion, daisy, &c. increase. The *Labiatæ* or labiate plants, such as mint, thyme, &c.; *Umbelliferæ*, such as hemlock, parsley, &c.; *Amentaceæ*, such as the birch, willow, &c.; and *Cruciferæ*, such as wallflower, cresses, &c. seem to belong to temperate zones. The last disappear entirely in the torrid zone. The greater part of the European *Orchideæ* (including the various species of orchis), are found only in shady and moist woods; while the saxifrages, primroses, and gentians, prefer calcareous hilly districts.

If we examine the distribution of the great classes of the vegetable kingdom over the globe, we shall find, that cryptogamous plants, such as mosses, lichens, mushrooms, sea-weeds, &c. are to phænogamous, or common flowering plants, in the proportion of 1 to 7. These same tribes in equinoxial countries are in the proportion of 1 to 5; in New Holland or Australia, as 2 to 11; in France, as 1 to 2; while in Lapland, Greenland, Iceland, and Scotland, they are in nearly equal proportion,

Monocotyledonous plants, or plants having only one cotyledon in the seed, such as grasses, lilies, palms, &c., over the whole surface of the known globe are to dicotyledonous, or those having two cotyledons, as the majority of our common trees, &c., as 2 to 9; from the equator to the 30th degree of north latitude, as 1 to 5. In proportion as we retire from the equator, the number of dicotyledonous plants diminishes; so that it is a half less at the 60th degree of north and the 50th degree of south latitude. We have not, however, as yet collected a sufficient number of facts in regard to this subject to establish any general rules which will be applicable to all countries.

What has already been said will show the difficulties to be encountered in determining with accuracy the regions of botanical geography. The partial attempts made by Tournefort, Linnæus, Adanson, Saussure, Soulavie, Ramond and Young, and the much more important labours of Stromeyer, Treviranus, Leopold Von Buch, Wahlenberg, Hornemann, and more particularly those of Humboldt, De Candolle and Brown, have furnished facts and principles upon which M. Schow has been able to found a botanical geography of the globe. But although the valuable essay of this able naturalist has done much to promote the progress of this part of botanical science, innumerable observations are still required in order to render it complete.

As the *station* and *habitation* of plants are the first elements of this new science, we shall, in the first place, define the meaning of these terms. We shall then give a view of the principal stations of vegetables according to M. De Candolle; and having defined what M. Schow means by a *phyto-geographical kingdom* or *region*, and by a *botanical province*, we shall notice the different countries which form the 22 regions into which M. Schow has divided the whole surface of the globe.

By *station*, we mean the physical nature of the locality in which each plant grows. It is connected with the exposure, the nature of the soil, the height above the level of the sea, the temperature, and the other causes which influence the distribution of vegetables; so that the station of a plant is a sort of result produced by the varied combination of all the influences of physical agents. By *habitation* we mean the region or part of the globe in which each species is most common.

It would be easy to make a considerable number of divisions among vegetables, by considering them according to the stations which they affect. M. De Candolle has

reduced them to fifteen classes, to which M. Bory de Saint Vincent has added two others. The following are the divisions adopted by these authors.*

1. Maritime or saline plants. These are terrestrial plants which grow on the border of the sea or of salt lakes; as *salicornia* or saltwort, *salsola* or glasswort, and some species of *statice* or sea-pink, &c.
2. Marine plants, such as seaweeds, lavers, &c. which are either buried in the ocean or float on its surface
3. Aquatic plants, growing in fresh water, either stagnant or running; as *sagittaria* or arrowhead, *nymphæa* or white water-lily, *potamogeton* or pond-weed, &c.
4. Marsh or swamp plants, living in ground which is generally submerged, but occasionally dry; as *ranunculus aquatilis* and *sceleratus*, or water and celery-leaved crowfoot; *polygonum amphibium* or amphibious persicaria, &c. The form of the plants varies according to the degree of moisture.
5. Meadow and pasture plants; as some species of *lotus*, or bird's-foot trefoil, a great number of grasses, trefoils, &c.
6. Plants found in cultivated fields. In this division are included many plants which have been introduced by man along with grain; as *centaurea cyanus*, corn blue-bottle; *sinapis arvensis*, or common wild mustard; *agrostemma*, corn-cockle; several species of *veronica*, or speedwell; *euphorbia*, or spurge, &c.
7. Rock or wall plants; as saxifrages, wall-flower, some species of *sisymbrium* or hedge-mustard, and *bromus*, or brome-grass; *linaria cymbalaria* or ivy-leaved toadflax, &c.
8. Sand plants; as *carex arenaria* or sea-carex, and *calamagrostis arenaria* or sand small-reed, which tend to fix the loose sand; *plantago arenaria*, sand plantain, &c.
9. Plants found on rubbish, or those which select the habitations of man and animals, on account of the salts and azotised substances which enter into their composition; as pellitory of the wall, nettles, and some mushrooms, &c.
10. Forest plants, including trees which live in society, as the oak, the beech, firs, &c. and the plants which grow under their shelter, as the greater part of the European orchises, some species of carex, broom-rape, &c.
11. Plants of the thickets or hedges, comprehending the small shrubs which constitute the hedge or thicket, as the hawthorn and sweet-briar, &c., and the herbaceous plants which grow at the foot of these shrubs, as tuberous moschatell, wood sorrel, violets, &c., or those which climb among their numerous branches, as bryony, black bryony, some species of everlasting pea, &c.
12. Subterranean plants, or those which live in mines and caves, almost entirely excluded from the light, as *hypnum*, truffles, and some other cryptogamic plants.
13. Plants of the mountains, which M. De Candolle proposes to divide into two sections: 1. Those which grow on alpine mountains, the summits of which are covered with perpetual snow, and where during the heat of summer there is a continued and abundant flow of moisture, as numerous saxifrages, gentians, primroses, rhododendrons, &c.; 2. Those inhabiting mountains on which the snow disappears during summer, as several species of snap-dragon, among others the alpine snap dragon, umbelliferous plants, chiefly belonging to the genus *seseli* or meadow saxifrage, labiate plants, &c.
14. Parasitic plants, which derive their nourishment from other vegetables, and which, consequently may be found in all the preceding situations; as the mistletoe, broom-rape, dodder, and a number of lichens, mushrooms, mosses, &c.
15. Pseudo-parasitic plants, which live upon dead vegetables, as lichens, mosses, &c., or upon the bark of living vegetables, but do not derive nourishment from them, as *epidendron*, &c.
16. Plants which vegetate in hot springs, the temperature of which ranges from 80 to 140 or 150 of Fahrenheit's thermometer; as *vitex agnus castus*, and several cryptogamous plants, as the hot-spring laver, (*ulva thermalis*,) &c.
17. Plants which are developed in artificial infusions or liquors. Among others, we mention a conferva, or sort of mould found in Madeira wine.

To cultivated plants, which have become naturalized in fields and gardens by the hands of man, we cannot assign any station or region. The greater part of them follow everywhere the human footsteps, and their native country is almost always involved in the greatest obscurity.

In general, we may say that the station of the plant above the level of the sea, varies the more that its ordinary habitation approaches to the climate of the temperate zones. Plants which grow in all latitudes also grow at all heights, and plants which only grow in a particular latitude, are found at a height above the level of the sea where the temperature corresponds to that of the latitude.

Professor Schow, in his general botanical division of the globe, characterises the regions by the most remarkable feature of their vegetation, adopting commonly used geographical terms only where he conceives that a certain division of the earth ought to constitute a distinct region, but is not sufficiently acquainted with its productions to determine and define their forms. In order that any portion of the globe may form what he proposes to call a *phyto-geographical region*, it is necessary that at least one half of the species should be indigenous in it; that a quarter of the genera should also be peculiar to it, or at least should have there a decided maximum, so that their congeners in other climates should only appear as their representatives; and finally, that individual families of plants should either be exclusively confined to the region, or have their *maxima* there. He does not, however, regard this last condition as absolutely essential, provided the two others are fulfilled. Slight degrees of difference in the vegetation characterise the divisions or provinces of a region or kingdom; he considers a quarter of the species and some genera sufficient to determine them.

The following are the twenty-two botanical regions or kingdoms into which Professor Schow divides the globe: —

1. The Region of Saxifrages and Mosses, or the Alpine Arctic Flora. This region is characterised by the abundance of mosses and lichens, the presence of the saxifrages, gentians, chickweed-tribe, sedges and willows; the total absence of tropical families; a notable decrease of the forms peculiar

* See Article *Geographie Botanique*, in the *Dictionnaire Classique d' Histoire Naturelle.*

to the temperate zone, of the forests of firs and birches, and an absence of other forests; the small number of annual plants, and the prevalence of perennial species; and finally, a greater liveliness in their simple colours. This region is divided into two provinces: 1. The province of the *Carices* or the Arctic Flora, which comprehends all the countries within the polar circle, with some parts of America, Europe and Asia which are to the south of it, more especially Lapland, the north of Russia, Siberia, Kamschatka, New Britain, Canada, Labrador, Greenland, and the mountains of Scotland and Scandinavia; 2. The province of Primroses and Rampions, or the Alpine Flora of the south of Europe, which embraces the flora of the Pyrenees, Switzerland, the Tyrol, Savoy, &c., the mountains of Greece, the Appenines, and probably the mountains of Spain.

2. The Region of the Umbelliferous and Cruciferous Plants, (to which the hemlock, parsley, wallflower, cresses, &c. belong.) These tribes are here in much greater number than in any other region; roses, crowfoots, mushrooms, amentaceous and coniferous plants, are also very numerous; the abundance of *carices*, and the fall of the leaves of almost all the trees during winter, form also the chief features of this division. It may be separated into two distinct provinces: 1. The province of the *cichoraceæ*, (including the sow-thistle, dandelion, lettuce, &c.) which embraces all the north of Europe, not comprehended in the preceding region, namely, Britain, the north of France, the Netherlands, Germany, Denmark, Poland, Hungary, and the greater part of European Russia; 2. The province of the *astragali* and *cynarocephalæ* (to which the milkvetch, burdock, thistle, &c. belong), which includes a part of Asiatic Russia, and the countries about Mount Caucasus.

3. The Region of the *Labiatæ* and *Caryophylleæ* (to which the pink, catchfly, sandworts, &c. belong,) or the Mediterranean Flora. It is distinguished by the abundance of the plants belonging to these two orders. Some tropical families are also met with, such as palms, laurels, arums, plants yielding balsam and turpentine, grasses belonging to the genus *panicum* or millet, and the true *cyperaceæ* or sedges. The forests are composed chiefly of the amentaceous and coniferous tribes, as birches, oaks, &c., the copses of *ericineæ* or heath tribe, and *terebinthaceæ*, as the mastich, &c.; we meet with a great number of evergreen trees. Vegetation never ceases entirely, but verdant meadows are more rare. M. Schow divides this region into five provinces: — 1. The province of the Cistuses, including Spain and Portugal; 2. The province of the Sage and Scabious, the south of France, Italy and Sicily; 3. The province of the Shrubby *Labiatæ*, the Levant, Greece, Asia Minor, and the southern part of the Caucasian countries; 4. The Atlantic province, the north of Africa, of which he does not yet know any distinctive character; 5. The province of the Houseleeks, the Canary Isles, and probably also the Azores, Madeira, and the north-west coast of Africa. Many houseleeks, and some spurges with naked and spiny stems particularly characterise this province.

4. The Region of the *Rhamni* and *Caprifoliaceæ* (to which the buckthorn and honeysuckle belong), or the Japanese Region. This region is as yet too little known to enable us to determine accurately its characteristic features. It embraces the eastern temperate part of the old continent, namely, Japan, the north of China, and Chinese Tartary. Its vegetation appears to occupy a middle place between that of Europe, and that of North America, approaching more to the tropical than to the European.

5. The Region of *Asters* and *Solidagos*, (michelmas daisies and golden-rods.) This is marked by the great number of species belonging to these two genera, by the great variety of oaks and firs, the small number of *cruciferous* and *umbelliferous* plants, the total absence of the heath, and the presence of more numerous species of whortleberry than are to be met with in Europe. It comprehends the whole of the eastern part of North America, with the exception of what belongs to the first region. It has been divided into two provinces: — 1. That of the south, which embraces the Floridas, Alabama, Mississippi, Louisiania, Georgia, and the Carolinas; 2. That of the north, which includes the other states of North America, such as Virginia, Pennsylvania, New York, &c.

6. The Region of *Magnolias*, comprising the most southern parts of North America. The tropical forms which show themselves more frequently than on a similar parallel of the old continent, are the chief feature in the vegetation.

7. The Region of Cactuses, Peppers, and Melastomas. These families are here predominant, both as regards the number of the species and of the individual plants. It is divided into three provinces: — 1. The province of the Ferns and Orchises, comprehending the West India Islands; 2. The province of the Palms, the lower parts of Mexico, New Granada, Guiana, and Peru; 3. Brazil also seems to form a province, and may perhaps constitute a region of itself.

8. The Region of *Cinchonæ*, or Medicinal Barks, which comprises a part of the elevated regions of South America, included in the torrid zone. The *cinchona* belongs exclusively to this region and forms its principal feature.

9. The Region of *Escallonias*, Whortleberries and Winter's Barks. It embraces the highest parts of South America. We also meet with alpine plants, as saxifrages, whitlow-grass, sandworts, sedges, and gentians. Perhaps also the mountains of Mexico belong to this region, although they may form a separate province, that of the oaks and firs.

10. The Chilian Region. The Flora of Chili differs essentially from those of New Holland, the Cape of Good Hope, and New Zealand, although an approach to them is observable in the genera, *goodenia*, *araucaria* (Chilian pine), *protea*, *gunnera*, and *ancistrum*.

11. The Region of Arborescent *Compositæ* (or arborescent plants, with flowers like the dandelion, daisy, &c.) The great number of syngenesious plants, more particularly of the family of *boopideæ*, forms the chief feature of this flora, which approaches in a remarkable manner to that of Europe, whilst it differs entirely from those of Chili, the Cape and New-Holland. This region comprehends the lower part of the basin of La Plata, and the plains which extend to the west of Buenos Ayres.

12. The Antarctic Region, formed by the countries near the Straits of Magellan. There is a considerable affinity between the vegetation here and what is seen in the north temperate zone. Polar forms, however, display themselves in the species of saxifrage, gentian, arbutus, and primrose. There is also a resemblance between the flora of this region, and those of the mountains of South America, of Chili, the Cape, and New Holland.

13. The Region of New Zealand. This flora, besides the plants peculiar to New Zealand, comprehends several others which belongs to the extremities of America, Africa, and Australia or New-Holland.

14. The Region of *Epacrides* and *Eucalypti*. It comprehends the temperate parts of New Holland, and Van Dieman's Land. Besides the two families whence it receives its name, it is characterised by the presence of a great number of *proteaceæ*, myrtles, *stylideæ*, *restiaceæ*, *diosmeæ*, acacias, &c.

15. The Region of *Mesembryanthema* or Fig Marigolds, and Stapelias. These two genera, as well as the heaths, are very abundant here. The latter family is found in greater quantity here than any where else. It embraces the southern extremity of Africa.

16. The Region of Western Africa. We are only acquainted with Guinea and Congo, the vegetation of which is a mixture of the Floras of Asia and America, though most resembling the former. This region is characterised by a considerable number of grasses and sedges, and the peculiar genus *adansonia*, the baobab, (the largest known tree in the world.)

17. The Region of Eastern Africa. In regard to the eastern coast of Africa, our knowledge is very imperfect. The region is chiefly distinguished by the genera *danais*, *ambora*, *dombeya*, and *senacia*.

18. The Region of the *Scitamineæ*, (of the turmeric, cardamom, Indian shot, &c.) or the Indian Flora.

The *scitaminoæ* here are much more numerous than in America, as well as the *leguminosæ*, such as pease, broom, &c. *cucurbitaceæ*, or the cucumber tribe, and *tiliaceæ*, or the lime-tree tribe, although in a less degree. In consequence of the imperfect state of the science, we cannot subdivide this region into provinces. It comprehends India, east and west of the Ganges, the Islands of Madagascar, Bourbon and Mauritius, those between India and New Holland, and perhaps the tropical part of this last continent.

19. The Mountains of India ought to form one or two regions, the vegetation of which differs from that of the plains. These countries perhaps constitute one region with the whole of central Asia.

20. The Floras of Cochin China, Tonquin, and the north of China, notwithstanding their resemblance to that of India, present a sufficient number of peculiar indigenous plants to constitute a distinct region.

21. The Flora of Arabia and Persia, differing from that of India and the Mediterranean, forms a particular botanical region, characterised by the numerous species of *cassia* and *mimosa* (to which senna, the sensitive plant, &c. belong), which are found in it. It appears probable that Nubia and a part of Central Asia belong to it. Abyssinia, the elevated parts of which possess such a different climate, may perhaps form one of the great subdivisions, or even a totally distinct region.

22. The Islands of the South Sea, which lie within the tropics, form undoubtedly a separate region, though with but a slender degree of peculiarity. Among 214 genera, 173 are found in India, and most of the remainder are in common with America. The bread-fruit tree is among the characteristics of these islands, although it is not confined to this region.

Marine plants are also confined to particular regions, from causes analagous to those which limit or favour the extension of terrestrial plants. M. Lamouroux has published a valuable work on their geographical distribution. In the sea as on the land large tracts have each their peculiar system of vegetation. Thus, the northern ocean, from the pole to the 40th degree, the sea of the Antilles, the eastern coasts of South America, those of New Holland, the Indian Archipelago, the Mediterranean, the Red Sea, &c. present so many large marine regions, each of which possesses a peculiar vegetation.

The torrid zone possesses vegetable riches which we cannot expect to naturalize in other regions of the globe. The most succulent and aromatic fruits are there ripened; plants there have more vigour, more variety, and more splendour; the burning rays of the sun in these regions raises the herbaceous plant into a shrub, the shrub into a tree. There are produced those balsams, gums, and juices, which gratify and excite the palate of the voluptuous European, and from thence are derived many of the most valuable remedies for the cure of the ills which afflict humanity. There we find the sugar-cane, the coffee-tree, the palm, the bread-fruit tree, the pisang, the immense baobab, the date, the cacao, vanilla, canella, nutmeg, pepper, and the camphor-tree. In the torrid zone we have, moreover, many trees used for dyeing, and some species of grain which are almost peculiar to it. At the same time, this zone possesses most of the species which thrive under a less burning sun. The plant which vegetates on the plain in Siberia, is found on the highest summits of the mountains under the line, and the sides of the same mountains represent the temperate zone.

Vegetation under the equator presents a most enchanting aspect, and it is there that plants display the most majestic forms. In the same way as the bark of trees exposed to northern frosts is covered with lichens and mosses, so the trunk of the cashew-tree, and the gigantic fig of the tropics, is adorned with the *cymbidium* and the oderiferous vanilla. The fresh verdure of the leaves of the *pothos*, is beautifully contrasted with the variously coloured flowers of the orchis tribe. The mountain ebony, the climbing passion-flower, and the *banisteria* with its golden yellow flowers, twine round the trunks of the forest trees. Delicate flowers grow from the root of the cacao tree, as well as from the thick, rough, and blackened bark of the calebash and the *gustavia*. Amidst this luxuriant vegetation, and this profusion of climbing plants, the naturalist is often at a loss to recognise the trunk to which the leaves and flowers belong. A single tree adorned with *paullinia*, *bignonia*, and *dendrobium*, forms a group of vegetables, which if separated from each other would cover a considerable space. In the torrid zone, plants abound more in juices, and present a verdure more shining, and leaves larger and more brilliant, than in the northern climates. Vegetables which live in society, and which render the aspect of the European plain so monotonous, are not to be found in equatorial regions.

In consequence of the prodigious height to which whole regions are elevated in the tropics, and the cold temperature of that elevation, the inhabitants of the torrid zone, while they are surrounded by polar trees and bananas, may also behold vegetable forms, which seem to belong only to northern countries. Cypresses, firs, oaks, barberries, and alders, which resemble those of our own country, cover the mountainous districts of the south of Mexico, as well as the chain of the Andes under the equator.

§ 2. *On the Geographic Distribution of Animals.*

The unknown power which has scattered animal life over the globe, and which continues to sustain it, has certainly not been confined to a single region. Matter,

everywhere, must have acquired animation from the voice of the Creator; the elementary particles, while attracting each other, and disposing themselves in all sorts of forms, sometimes giving rise to primitive or elementary fibre, sometimes being transformed into fluids, and then into solids, and thus constituting muscles, bones and different kinds of texture, must have everywhere presented the spectacle of that generative process, which is probably at all times ushering into existence those infusory animals, those monads which, even by the aid of the microscope, appear only as a small point. It is difficult to conceive that there exists in this original tendency of matter towards organization, differences founded upon the geographical situation of places.

The equatorial seas are the special habitation of the animals named the *polypi*, the development of which, seems to require the rays of a vertical sun. The *branched polypi* form an entire circle round the globe, and are replaced in cold latitudes by *encrusting polypi* or *nullipores*. The true *coral* seems to occupy only the basins of the Mediterranean and the Red Sea. The stories which have been told relative to the existence of immense polypi or hydras at different parts of the ocean, as well as in regard to the monstrous *krakens* of Norway, are altogether fabulous.

Zoophytes exhibit the first actings of creative power; they may be considered as confused masses of beings animated with an incipient principle of life, but not yet existing separately. *Mollusca*, whether naked or testaceous, have acquired a real individual existence. These animals are scattered with the greatest uniformity between the tropics. Some of them are found all round the globe, while others are confined to particular seas. The shores of America and New Holland have each peculiar species which vary according to the degree of latitude. The shells of Timor are found on the coasts of New Holland, only as far as to the south-west point; on the other hand, the shells of Van Dieman's Land, such as *haliotis gigantea*, and *phasianellus*, diminish in size as they follow the coast of New Holland to King George's Sound, and entirely disappear beyond them. The *pinna marina*, whose glossy filaments outshine silk, thrives only in the Indian Seas and the Mediterranean. The pearl-oyster attains perfection nowhere except in the equatorial seas. But this natural arrangement is not always observed; for many shells are transported from one pole to another by means of ships to which they adhere. In this way the waters of New Holland have been peopled with the *teredo navalis*, so destructive to vessels.

Amidst the vigorous vegetation of the torrid zone are produced the most brilliant and the strongest *insects*, such as the butterflies of Africa, of the East Indies and America, which rival the lustre of metals in the brilliancy of their colours. In these regions, too, and more particularly in South America, the forests, peopled with millions of glow-worms, present to the eye of the benighted traveller the scene of an immense conflagration. The *termes* of Africa, called also the white ant, build solid hillocks, and the spider of Guyana attacks even birds with success. Certain kinds, such as gnats, bees, and flies, appear to be equally distributed over the whole globe. The short polar summer calls into existence a multitude as innumerable as the heats of the equator. The musquito, which torments the traveller on the banks of the Orinoco, resembles that which buzzes in Lapland. Wherever man has not drained the marshes, and cleared the forests, insects reign with triumphant sway.

We have thus followed, through the orders of zoophytes, mollusca, and insects, the gradual development of animals *with white blood and without vertebræ*, which, having few or no organs of sensibility, appear to form in the animal kingdom a sort of hemisphere diametrically opposite to that of animals *with vertebræ and red blood*.

This second series of the animal kingdom commences, like the first, in the bosom of the ocean, that cradle of all primitive organizations.

Fishes form a special division of the animal kingdom. While destined to live in a medium denser than air, their organization resembles in some respects that of birds, and in others that of the mammalia. The want of activity observed in fishes, renders it probable that every basin of the ocean has its particular tribes, which are born and die there. We know the stations of some species of fish. Thus the cod, which are distributed all over the northern seas, between Europe and America, congregate chiefly upon the great banks of sand to the south-east of Newfoundland. Pursued by many thousand fishermen, the cod propagates with astonishing fecundity; it has been calculated that each female carries in its ovary more than nine millions of eggs. Some fish are confined exclusively to the southern ocean, while others inhabit the northern polar seas. The *coryphenæ* and *chatædons* are met with only in the torrid zone. Different species of the former, which, on account of their brilliant colours, have received the name of *giltheads*, are the most active enemies of the flying fish, which, like them, are found only between the tropics, or at farthest, toward the 40th parallel

of latitude. These genera are found in the Eastern, as well as in the Atlantic ocean, but probably the species are different. There are a great number of electric fishes, such as the *gymnotus electricus* of America; the trembler, or the *silurus electricus* of the rivers of Africa, and the *torpedo*, which appear to be dispersed over all the seas.

The migrations of fishes have not yet been studied with success. We do not know why the herrings, coming from the depths of the frozen sea, proceed every year to the coasts of Ireland, Scotland, Norway, Sweden, Denmark, Holland, and the United States, as well as to those of Kamschatka, and the neighbouring islands. Tunnies migrate also every year from the Atlantic to the Mediterranean; a fact which was known to the ancients.

The fishes of lakes and rivers are still less susceptible of geographical classification. The genera *cyprinus* and *perca*, of which carp and perch are the representatives, people almost all the rivers of the temperate zones. Sturgeons inhabit small inland seas, such as the Baltic, the Caspian, and the Black Sea; the large species common in the Wolga and the Danube, is surpassed in size by the *silurus glarus*, the giant of river fishes. The voracious pike and some other species often live in subterraneous seas, which communicate with the atmosphere only by small openings.

It is curious to remark the presence of some sea fishes, such as the *cabeliau*, a kind of cod, in Lake Winnipeg, in the interior of North America. There are some fishes which occasionally forsake their native element. Eels traverse meadows; and upon the coast of Coromandel, a kind of perch, *perca scandens*, climbs up the palm-trees. A fish is also mentioned as having been found by Commerçon in New Ireland, which often climbs upon trees, and runs along the sand like a small lizard.

We may perhaps be allowed to class with fishes those warm-blooded mammalia which possess a combination of external forms, equally characteristic of the fish and the quadruped. We mean the whale, the narwal or sea unicorn, the cachalot or spermacetic whale, the dolphin, the sea-horse, and the phoca or sea-calf, which, inhabiting both the sea and the land, form, in the progressive development of their organization, a link between two different orders.

As the mammiferous amphibia or the *cetacea*, require frequently to breathe atmospheric air, it is highly probable that they are confined to certain climates. The phocæ of the South Seas are undoubtedly different from those which inhabit the waters of the north. The sea-lion met with in the neighbourhood of Kamschatka, differs essentially from that of the Greenland seas. The *phocæ vitulinæ* or sea-calves, which are said to exist in the Caspian sea, in the lakes of Aral, Baikal, and Ladoga, appear to be a species allied to the otter, and different from the marine phocæ. The large-headed cachalot, which inhabits the equatorial regions, particularly the Indian Ocean, and from which we procure ambergris, differs materially from the great cachalot of the frozen seas.

Among terrestrial animals *reptiles* occupy the lowest rank. The crocodile of Africa, the gavial of the Ganges, and the different caymans of America, are the giants of the lizard tribe. In the warm regions of America and Oceanica, we meet with gigantic serpents, which conceal a deadly poison under their fangs. Tortoises, which feed on sea-weeds at the bottom of the ocean, cover the sands of equatorial regions only with their numerous eggs.

The wings with which *birds* are provided seem to assign to them the whole atmosphere as a domain. These animals, however, are subject to certain geographical laws. The condor and the king of the vultures, which soar above the summit of the Chimborazo itself, never forsake the chain of the Cordilleras of Peru and Mexico; the vulture and the great eagle never remove from the summits of the Alps. The sea-eagle or ospray is perhaps distributed over the whole globe. Parroquets are chiefly confined to the torrid zone; they are common in America, and are found as far as the islands of Macquarie, in the 52d degree of south latitude. The beautiful loris come from the islands to the south-west of Asia, and the aras are all brought from America. The famous birds of paradise are never met with beyond the limits of a very narrow region of the torrid zone, viz. New Guinea, and the neighbouring islands. Of the birds which cannot fly, every equatorial region isolated by the sea produces its particular kinds. The ostrich of Africa and Arabia, the cassowary of Java and Australia, and the touyou of America, present, in every distinct species, the same general features of organization. The smaller birds in tropical countries are adorned with the most splendid colours, their plumage vying with the metallic brilliancy of the insects in the same zone.

The temperate zone of birds reaches in our hemisphere from the 30th to the 60th parallel. Within these boundaries the genera, and even some species, are no longer

confined to regions distinctly marked, and have no particular fixed countries. Besides, man has either transplanted, or drawn in his train with him as he wandered, several species previously confined to one particular country. The most remarkable geographical phenomenon is the annual migration of swallows, of storks and cranes, which at the approach of winter abandon the northern countries of Europe to visit Italy and Spain, and even Africa.

The frozen zone possesses a small number of species which are peculiar to it, and these belong chiefly to the aquatic genera, more especially the duck tribe.

Every grand maritime division of the globe has its peculiar birds. The albatros makes its appearance as soon as we approach the 40th parallel of latitude. The frigates, and the tropical birds, never forsake the torrid zone. The penguin of the Northern Pole is represented by the manchot in the South Seas. These birds without wings, may be considered as the lowest of the order to which they belong.

Quadrupeds form an order of animals, much superior to the preceding, and their geographical distribution may throw much light on the history of the earth, and is intimately connected with the history of man himself.

In the migration of animals, we have not so much to attend to their *active power*, or the energy of their organs, as to what may be termed their *passive power*, or their capacity of resisting changes of temperature. Frequently, out of a whole genus, one species only is endowed with this capacity. At another time an animal species owes its extensive distribution solely to the care of man, who was able to master it, and who carried it along with him to the very extremities of the globe. The external organs of animals undergo great changes, merely in consequence of their *domestication*; difference of climate produces others not less remarkable. As to the wild animals, they are directed in their migration, by the abundance or the scarcity of food. The carnivorous ones find almost everywhere their natural food; for this reason they have been able to spread themselves to a great extent. Those which cannot support great cold, have been unable to cross from the old to the new continent, because the only direct mode of communication between these two continents, is that furnished by the arctic ice. There are many different species of animals, whose residence history proves to have anciently been in much colder climates than those which they now inhabit. The continual inroads of man have either destroyed them or driven them away, or the progress of agriculture, by clearing the forests, has bereft them at once of their range for food, and their place of shelter.

Several quadrupeds, by their almost general distribution, baffle every attempt at geographical classification. These quadrupeds are either in a state of domestication, such as the dog, the cow, the sheep, the goat, the horse, the ass, the pig, and the cat; or in a wild state, as the fox, the bear, the hare, the rabbit, the stag, the deer, the squirrel, the rat, the mouse, and the ermine. Amongst these animals, however, there are some which do not live in the frozen zone.

The *dog*, the faithful companion of man, has followed him into every climate; in many countries he is the only domestic animal, and supplies the place of the horse and the ox.

The *ox* lives as far as the 64th degree, and in Lapland even under the 71st. This animal appears to be a native of the warmest part of the temperate zone of the old continent; it is there that he attains the greatest degree of strength and courage. But in humid and cold climates, such as Gallicia, Holstein, and Ireland, the ox grows much larger, and the cows give more milk.

The *sheep* and the *goat* equally support the polar cold and the heat of the torrid zone. The original race of sheep, the *argali* or *mouflon*, still exists, according to Zimmerman, on all the great mountains of the two continents. The *capricorn* and the *ibex* or *wild goat*, which are the ancestors of the common goat, inhabit the highest mountains of Europe, and more especially those of Corsica.

The *horse*, which did not exist in the new world before the arrival of Europeans, is spread in Europe, and in Iceland even beyond the polar circle. In Asia, the horse is scarcely found beyond the 64th parallel. In America, it reaches Patagonia. Arabia, Persia, Turkistan in Asia, Barbary in Africa, Andalusia, England, the kingdom of Naples, Hungary, Poland, Denmark and Normandy in Europe, are the countries which furnish the best and the finest horses.

The *ass*, although far from being reckoned a very delicate animal, does not support cold so well as the horse. In Europe it is rarely seen beyond the 52d parallel; and we do not believe that it can propagate at the 60th degree of latitude. The climates most favourable to the ass, are those between the 20th and 40th parallels. There he grows large and handsome, is lively and docile, and is held in estimation.

The *hog* is met with throughout the whole of the old continent, beginning at the 64th degree of north latitude. The *wild boar* is not found beyond the 60th degree. In the new world there were none of these animals previously to its discovery by Columbus; they have been since introduced, and now extend from the 50th degree north latitude as far as Patagonia. The hog is distributed over almost all the islands of the Great Ocean, peopled by the Malay race, where it is the chief domestic animal.

The *cat*, now distributed over the whole globe, was not originally met with in America; and according to the learned naturalist Lesson, not even in any part of Oceanica.

The species of wild animals scattered over all the climates of the two continents are very few, it is even doubtful whether there are any except those introduced into the new world by man.

Of all the wild quadrupeds, the *fox* is perhaps the most extensively distributed, and most easily acclimatised. Vast numbers of foxes inhabit Nova Zembla, and the shores of the frozen sea; and they are not less numerous in Bengal, Egypt, and upon the coast of Guinea. They are also found over the greater part of the new world, but the species are different from those in the old world.

Animals similar to the *hare* are found in Siberia, and on the banks of the Senegal; upon the coast of Baffin's Bay, and over all the New Continent.

The *squirrel*, according to Zimmermann, inhabits every part of Europe and Asia, from the extremities of Siberia to the kingdom of Siam, and is to be met with in Africa and the two Americas. But it appears that in every region of the world the species are different.

The *rabbit*, so generally distributed over the old continent, seems to have been brought thither by colonists from the new world, and to have afterwards passed from the domestic to the wild state.

The *stag* is only found in the old continent. It inhabits Europe as far as the 64th degree, and Asia to the 55th, and in some places even to the 60th degree. In America, the place of the stag is supplied by the *wapiti*, an animal peculiar to that part of the world.

The *common bear* seems to be confined to Europe and the north of Asia, and does not exist in America. The *black bear* is an imaginary species. There are two bears mentioned by Horsfield as peculiar to the Malay Islands, and called by him the *great-lipped* and the *Malay bear*.

The *ermine*, according to Zimmermann, lives in all climates. There are, however, differences between the species which inhabit the Molucca Islands, Guiana and Africa. The same species is found in Siberia, Lapland, Newfoundland, and Canada.

Rats and *mice*, those troublesome parasites, embark on board our ships, and cross with impunity the equator, as well as the polar circles. There are none of them however in Greenland, nor in the most northern part of Lapland; and in Siberia they are never observed beyond the 61st parallel. From the preceding observations, we may draw the conclusion, that it is not yet certainly demonstrated that any species of animals, perfectly identical, has been distributed by nature over all the regions of the globe. In similar climates, the organizations have assumed characters which nearly approximate, but never exactly coincide.

There are some quadrupeds, which, from their capacity of supporting a very great degree of cold, are distributed over both continents without having ever passed the tropics; they belong to the cold part of the north temperate zone.

The *rein-deer*, of all known terrestrial animals, has its range nearest the pole. In Scandinavia, it can scarcely exist to the south of the 65th parallel; in Russia, from the greater coldness of the climate, it is found under the 63d; in Asia, it descends still lower, and roves into Chinese Tartary, among the Tungouses, beyond the 50th degree. The rein-deer, or the *karibou* of Canada, which is the same animal, descends in America as low as the 45th parallel.

The *white* or *polar bear*, an animal totally different from the common land bear, and much more formidable, inhabits all the coasts of the frozen sea, and crosses from one country to another upon the floating ice.

The *isatis*, or *polar fox*, an animal different from the common fox, appears to like the cold more than the rein-deer, or even the white bear. It is not confined to the immediate vicinity of the pole, but advances as far as the Aleutian Islands and Kamtchatka, on one side, and on the other to Iceland and Lapland.

The *river otter* is found upon the Old Continent, from the 70th degree, to about the 20th, in the kingdom of Siam; but in the European countries on the shores of the Mediterranean, it is scarcely ever seen, having been probably expelled in conse-

quence of the cultivation of the soil. The industrious and peaceful *beaver* was once, perhaps, a native of all the countries of the globe, or at least of the whole of the northern temperate zone, for their habitations existed in France, in Italy, in Persia, and in Egypt. This half-civilized race of animals has been extirpated by man. In the new world, we still find small communities of beavers, from the 60th to the 30th northern parallel.

To the *marten* is assigned about two-thirds of the northern temperate zone, beginning at the 67th degree in Europe, the 64th in Asia, and the 60th in America.

The distribution of some other kinds of animals is uncertain. The *lynx*, that tiger of cold climates, lives to the south of the polar circle; in the Ancient Continent, he appears as far north as the Pyrenees, and in Mongolia. We are but imperfectly acquainted with those animals of the new world, particularly of Carolina and of North Mexico, to which the name of *lynx* has been given.

The *elk*, an animal which is every day becoming more rare, seems to dread extreme cold, since in Europe it very seldom passes to the north of the 64th parallel; on the other hand, it is never found to the south of the 52d degree. In Asia, the farther we advance towards the east, the more does it range to the south. The American elk, though not much different, appears to belong to a particular race. We find it to the south of Hudson's bay, and it extends to New England, or perhaps in the interior as far as to the Ohio.

The *flying squirrel (sciuropterus)* never ventures farther either north or south, than the limits of the fir forests in which it makes its abode, in Asia and in America. The *mountain rat*, or *marmot*, follows in Europe the chain of the Alps and the Carpathian mountains. It does not exist in Scandinavia, but is to be seen in Poland, and the Ukraine. It is found at the mouth of the Don, on the Ural mountains near the river Kama, and from thence the race has been propagated as far as Daouria. In the New World, this animal is found from Canada to Virginia, and even upon the Bahama islands. The *badger* and some other small animals inhabit equally the northern half of the temperate zone.

The quadrupeds which exclusively belong to the one or the other of the two continents, are in general such as are unable to support the cold which prevails beyond the 60th parallel. The *lemming*, however, a species of mouse which often migrates in vast numbers from one country to another, inhabits the whole of the frozen zone of the old continent, and has not been found in America. The animal named the *musk* inhabits the mountains of Asia, from Cashmere and the Altai to the mouths of the river Amur; it is not spread over any part of the new world. There are still some exceptions less remarkable.

Certain animals appear to be attached to the confines of the temperate and torrid zone.

The *camel* lives in European Turkey, in the Crimea, in the whole of Zoungaria, in Mongolia, and amongst the Kirgees, Bashkirs, and the Mandchew Tartars, as well as in Arabia and Syria.

The *dromedary*, or camel with one hump, well known for its fleetness, thrives best in Africa, where it is to be met with in Egypt, in Barbary, on the banks of the Senegal and the Gambia, in Nigritia, and even in Guinea and Abyssinia.

Both kinds of camel appear to be chiefly attached to that long tract of mountainous country, and those naked elevated plains which traverse the whole of the old continent.

The nimble *chamois* loves the mountains of the temperate zone, the tops of the Pyrenees, the Alps, the Appenines, the Carpathian mountains, Caucasus, and the country of Siberia, to the banks of the Ischim. The *antelope saiga*, and the *antelope with the goitre*, inhabit the upland plains of Tartary; the former is found as far as the 53d parallel. The *gazelle*, with its mild and brilliant eyes, prefers the more southern countries; a native of Caucasus, along with the chamois, the gazelle extends its range as far as Arabia, and across the whole of Africa to Senegambia. It is again met with in the southern temperate zone, and in Cafraria, together with a great number of other species of antelope. The race of *antelopes* follows, like the camels, the great upland plains of the old continent. There are species, however, which appear to be peculiar to the cold temperate zone.

The *jackal* lives, according to Zimmermann, in Asia and Africa between the 43d and 8th degrees of northern latitude. The supposed wolves of Congo and of Cafraria are only jackals.

The *buffalo*, commonly regarded as originally coming from the torrid zone, has been domesticated, and carried as far north as the 46th degree, both in Europe and Asia. The *grunting ox*, or the *yak*, inhabits the upland plains of Mongolia or Thibet. The *buffalo of Cafraria (bos caffer)* appears to be spread over all Africa. The mountains

of Thibet also contain several very remarkable species of oxen, such as the *bos frontalis*, &c.

We now come to the quadrupeds peculiar to the torrid zone of the old continent.

The numerous family of *apes* gambol in the forests between the tropics, and show rather a dislike to the temperate climates, at least in their wild state. The apes that live out upon the rocks of Gibraltar, have propagated in that situation. As the word *ape* has been taken in a very generic acceptation, it is said that this animal, though confined to the torrid zone, is equally to be met with in the two continents; but, if we carefully distinguish the various species, we shall perceive that there are none of them common to both. There is a very distinct line of demarcation between the country occupied by the *monkey*, the *baboon*, the *mandrill*, the *jocko*, and the other apes of Africa, and that inhabited by the real *ourang-outang*, the *gibbon*, and the *wouwou*, animals which most nearly resemble the human figure, and which are met with in the islands of Borneo and Java. Even in the *quadrumana*, there are limits marked to each species; the *loris* belong to the East Indies; the *gallayos* to Senegambia; and the *makis*, properly so called, to Madagascar.

The *giraffe* or the *camelopard*, so remarkable for its height, its swan-like neck, and its gentle manners, seems to belong only to one region of Africa, namely that which extends lengthwise from Cape Guardafui to the Cape of Good Hope, and to which should be joined the mountainous plains, which probably occupy all the interior of southern Africa, between the sources of the Nile and those of the rivers of Congo, Coenza, and Zambeza. This region, which is almost unknown, with the exception of the maritime parts, is the native country of three sorts of asses, the common zebra, the zebra of Burchell or *equus zebroides*, and the *quagga*.

The two varieties of the *rhinoceros* have each of them its own country. That with two horns inhabits only South Africa, beginning at Congo and Abyssinia. The other, with one horn, is found in the East Indies, and in China. In this latter country the rhinoceres extends to the 30th degree north. They have on the other side of the line spread as far as the islands of Sunda.

The *hippopotamus* is now entirely confined to Africa; it inhabits all the great rivers of that quarter of the world, except the lower part of the Nile, and great numbers are seen near the Cape of Good Hope.

The *elephants* of Africa and Asia are of two different races, the Asiatic elephant inhabits only India, China, as far as the 30th degree of latitude, and some islands to the south-east of Asia, to which it has been transported by man. In Persia and in Arabia, we find no elephants but those which have been brought from other countries. The African elephant does not advance farther north than the 20th degree; from thence to the Cape of Good Hope they are everywhere met with in great numbers.

The *lion*, the powerful and formidable king of quadrupeds, is now-a-days found in the deserts of Arabia, from whence he extends his ravages to the environs of Bagdad. According to Zimmermann, he is to be met with in the mountains of Hindostan, upon the coast of Malabar, upon the Ghauts of India, and even in the islands of Sunda, and the kingdom of Siam; this, however, appears to us extremely improbable. Africa always was, and still is, the country most celebrated for an abundant breed of lions. The lions which roam in the elevated but burning plains, to the south of Mount Atlas, are the most distinguished for strength and courage.

The *tiger*, less extensively distributed than the lion, does not extend beyond the warm and temperate countries of Asia. It is found in eastern Persia, and in China; but the climates in which it attains the greatest size, and displays most ferocity, are those of Bengal, the Deccan, Malabar, Siam, Pegu, Ceylon, and Sumatra.

Africa contains no genuine tigers; but by way of compensation, it has *panthers* and *leopards*, two species that are sensibly distinguished only by their spots, these being more beautiful and more perfectly rounded in the leopard, which chiefly inhabits Guinea and Senegambia. The *ounce*, which differs from the panther in the grey colour of its hide, and the superior mildness of its nature, is more widely distributed, as it is found throughout the whole of Barbary, in Arabia, in Tartary, and China, and sometimes makes its appearance near Kutznesk in Siberia.

From this sketch of the geographical distribution of animals peculiar to the ancient continent, the following general inference appears deducible, viz. that the *interior of Asia, and that of Africa, have been each of them the native region of a certain number of species of animals*. The tiger, the Indian elephant, the camel with two humps, the the wild sheep, the *koulan* or wild ass, the *jiggetai* or horse ass, the grunting ox, the elk, and the musk, are the animals peculiar to the central upland plains of Asia. Those which are characteristic of the upland eastern plains of Africa, are the lion,

the African elephant, the dromedary, the buffalo of Cafraria, the giraffe or camelopard, the zebra, the quagga, and monkeys.

Amongst the animals which peculiarly belong to North America, we think, may be reckoned the great elk, named by the Americans, the *moose-deer*. The bears, the lynxes, the ounces of the United States, are probably as different from the animals of the same name in the old continent, as the squirrels and hares are upon which they feed.

The *bisons*, or humped bulls, are the largest quadrupeds in the new world. They roam in great herds to the west of the Alleghany range to the south of Hudson's Bay, from the 52° to the 33° of north latitude.

The *musk-ox*, which is about the size of a two-year-old heifer, and which in its general aspect resembles a large sheep rather than an ox, prefers bare and naked mountains. It inhabits chiefly the high latitudes of north America.

We now come to the quadrupeds indigenous to South America.

The *jaguar (felis onça,)* the tiger of the new world, resembles the ounce in strength, and the panther in skin. Some individuals equal the tiger in size. The *puma* or the *couguar*, which has been called the *American lion*, has a body more nearly resembling the wolf, and a head like that of the leopard of Guinea. It does not extend farther than the 45° of south latitude.

The *lama* or *guanaco*, which has been improperly named the camel of the new world, and the *paco*, which in its domestic state is called *vicugna* or *vigonia*, or Peruvian sheep, inhabits Chili and Peru, to the 10° south latitude. It is distributed neither in the plains of Tucuman, nor in those of Paraguay.

The *tapir* is the largest quadruped of South America, although it is only the height of a cow. A peculiar species of tapir is found in Sumatra. According to Lesson, the *mé*, or pretended tapir of the Chinese, is merely an imaginary animal. The armadillo, the tajassou-peccary, the idle aï, the sloth, the *fourmillier*, or ant-eater, the *tamanoir*, the different *agoutis* and *coatis*, species, all of which acknowledge South America as the place of their nativity, do not in general spread beyond the tropic. The tajassou, however, according to some accounts, is found in Chili. The small long-tailed apes, the *sapajous* or *marmosets*, the *tamarins*, the *sagouins*, and other similar species, are very numerous over all the torrid zone of America; they essentially differ from the apes of Africa and Asia.

On the confines of the temperate zone, we observe stags of different kinds, some undescribed mice or rats, and the elegant *hamster chinchilla*.

We have still to consider another province of the animal kingdom, a province hitherto imperfectly explored, but certainly very distinct from those which we have already examined. It is remarkable, that with about three exceptions, Australia has only as yet presented animals belonging to the *marsupial* division of the *carnivora*. We may remark, however, that the *didelphes*, which may be looked upon as the type of this family, are confined to South America, and the *couscous* are scattered over Polynesia and the Malay islands. In New Holland alone we find the *ornithorynchi*, small *edentata*, which are considered oviparous, the *echidnes*, the *petauristes*, and the true *phalangers*. The *kangaroo* is replaced in the Moluccas by the *pelandoc*. The *dazyures* in Australia take the place of the *civets* of other parts of the globe, but the *wombat* and *phascolarctos* remain without a parallel. As to the carnivorous amphibia, they are the same species which live on all the islands of South Polynesia. The *pteropus poliocephalus*, a species of shark found in the bay of Carpentaria, is also found at New Guinea. We may then consider New Holland as the cradle of an entirely new creation, as yet unknown in all its branches, and presenting animals formed upon a peculiar plan, and destined to elucidate the history of other animated beings.

§ 3. *On the Fossil Remains of Organic Bodies, Vegetable and Animal.*

The remains of organic beings buried in the bowels of the earth, and commonly known by the name of *fossils*, are of great importance in determining the geological epochs of our globe.

The debris of numerous vegetables which formerly adorned the earth, and of animals which covered its surface, traversed its waters, or inhabited its atmosphere, are undoubted evidences of a previous order of things anterior to the existence of man.

Fossils are essential to the formation of an accurate theory of the earth. They have enabled us to ascertain in a decided manner that there have been successive epochs, and a series of different operations, in the formation of the world. From the situation in which they are found, they prove that the surface of the globe must have under-

gone a very great change. They furnish distinct evidence as to the succession of the secondary and more recent deposits; and by analogy, they have enabled us to draw conclusions relative to the primitive strata. Had there been no fossil remains in any of the deposits, we could not have drawn correct inferences in regard to their comparative antiquity. "By fossils," says Cuvier, "we have learned the little we do know regarding the nature of the revolutions to which the globe has been subject. They have taught us, that the beds in which they are contained have been quietly deposited in a liquid, and that their variations correspond to the changes occurring in that liquid."

The study of fossil animals and vegetables, more especially of shells, which are the most numerous of all, has enabled M. Ferussac to ascertain, by comparing fossil with living species, that the temperature of the terrestrial surface has undergone a remarkable diminution, and that to this are to be attributed in a great measure all the changes which animals and vegetables have sustained. By the same means he has solved most important questions regarding the successive creation of living beings, and has developed the laws which regulated their distribution over the surface of the globe at a period anterior to the existence of man.

Petrifactions, taking this term in its ordinary acceptation, comprehend all the stony substances which have the form of an organic body. There have been instances where a liquid, impregnated with stony particles, has flowed into a cavity formed by an organic body which had disappeared. In that case the stony mass has assumed the exterior form of the body which was previously there. If this body was, for example, a branch or trunk of a tree, the stone will have knots and wrinkles on its exterior; but in the interior, it will exhibit all the characters of real stone. According to Hauy, it will only be "the statue of the substance which it has replaced."

At other times, a vegetable or animal substance, while undergoing a gradual and slow decomposition, is surrounded and pressed upon by a stony fluid. In proportion as an organic particle is dissolved and disappears, a stony particle replaces it. Thus, particle after particle, the stony matter occupies the spaces left empty by the gradual decay of the vegetable or animal parts; and by being moulded in these cavities, it copies minutely the texture of the organic body. In this way we usually explain the formation of what is called *petrified wood*, an imitation of real wood so faithful, that on making a transverse cut, we distinguish the appearance of concentric layers, which, in the living tree, arise from its annual growth. Sometimes it is even in such a state that we can recognize by the texture the species to which the tree belonged.

Mineralized bodies, and those which have been changed into bitumen or coal, may be referred to the same system of formation. Thus *turquoises*, for example, are the molar teeth of some large marine animal penetrated by a mineral substance, which has by degrees replaced the softer parts of the bone.

Impressions are found between the laminæ of certain schistose clays. They are either relievos or hollows, representing the skeletons of animals, more especially of fishes, leaves, reeds, and entire plants, chiefly belonging to the fern tribe.

We shall consider successively the different classes of fossil remains.

Fossil Vegetables are much more numerous than animals, although not so well preserved. They are found wherever fossils exist, but in very different states. In the earlier secondary deposits, they are found in the state of bituminous charcoal; in the newer, they exist in an earthy condition. In both instances, they have merely left impressions. In some of the recent deposits they are found petrified, or in the form of lignite. Coal, that important material for combustion, seems to be of vegetable origin. The plants met with in the old formations are aquatic, and belong to the warmest countries of the globe. It is only in the modern alluvial deposits that we meet with trees analogous to those found in our climates.

All the parts of plants may be fossilized. The roots, when petrified, are called *rhizolites*; the impressions of the leaves are named *lithobiblions* or *bibliolithites*, those of the flowers *antholites*, and those of the fruits *lithocarps*.

Bituminized wood, although buried at considerable depths, may be the production of some less ancient and less violent revolutions. Pieces of wood have been found, of which one end was in a natural state and the other bituminized; and it is remarkable, that this wood often belongs to indigenous species. At Upsal is preserved a large piece of an alder tree, which was discovered in Scania, converted into jet, having still the bark and buds very discernible. Thus bituminized woods approach by degrees to the nature of subterranean forests, or heaps of wood, which have been simply buried by some modern convulsion.

The numerous tribes of *zoophytes*, more especially *madrepores*, seem to have been

contemporaneous with the first organized beings. Their remains are found in some transition rocks, and in the greater part of the later formations. They are found there in all conditions, and sometimes in such quantity that the rock appears to be entirely formed of them. These fossils are almost always associated with the remains of molluscous animals. Ramond and other naturalists have seen madrepores and corallines on the highest summits of the Pyrenees. Fossil polypi, analogous to those of our seas, are very rare. Some of the species found correspond to those which live in the opposite hemisphere, on the coasts of the Indian Ocean and New Holland.

Amongst the remains of the animal kingdom, shells are the most abundant. They frequently occupy immense spaces, and are principally found in calcareous rocks. France furnishes us with the best known examples. The environs of Paris alone have supplied M. Lamarck with more than 80 genera, comprising upwards of 500 species; and if his arrangement were completed, the number of species already recognised might be almost doubled. We know that a vast bed of chalk, accompanied by shelly deposits, extends from Rethel, through the departments of the Maine and the Aube, towards Sens. The quantity of foreign bodies which have been found in this deposit of chalk, and in its vicinity, is very considerable. All the plains of what was formerly called the Isle of France present vast calcareous and sandy beds, filled with, or rather composed of shells, some belonging to species which now inhabit our seas, and others similar to those which live in fresh water, — a circumstance which establishes a difference between them, both as regards their age and their origin. In Touraine, or the department of the Indre and Loire, there exists a continuous bed of shells, about nine ancient square leagues in superficial extent, and at least twenty feet in thickness. The whole mass of shells is estimated at 170 millions of cubic toises.

The other countries of Europe are not less abundant in fossil shells. Twenty pages would be insufficient to enumerate the places in Germany, Italy, and England, where they are found. The stratified rocks of the chain of the Hartz, considered as the most ancient, contain also zoophites, belemnites, ammonites, encrinites, pentacrinites; in a word, shells the most remote from the actually existing genera. On the contrary, the most modern calcareous rocks, those of Mount Bolca, near Verona, and the chalk hills of England and Zealand, enclose genera approaching to those which now exist, such as ostracites, pectinites, buccinites, nautilites, chamites, and others. The north and the south of Europe do not yield to the central parts in this respect: the calcareous rocks of Rœttwik, in Sweden, at 3000 feet above the sea, the vegetable earth of Finland, and the argillaceous strata of the islands of Norway, abound in shells, some entire, and others nearly changed into earth. In Greece and Spain we often travel over nothing but shells. Ramond has found them in the Pyrenees, upon the summit of Mount Perdu, at the height of 10,578 feet; Lamanon on the Dauphinese Alps, at 7,446 feet; Guerin on Mount Ventoux, at 6,162 feet; and Saussure on the Alps of Savoy, at 6,104 feet. It may be affirmed, almost with certainty, that throughout Europe, wherever there is chalk there are also shells.

Everything concurs in leading us to consider the other parts of the world as perfectly similar to Europe with respect to the abundance of shells. Mount Carmel abounds in petrified oysters. On the chains which border the Caspian Sea, shells are found even at a height above the region of the clouds. The mountains of China, according to the Jesuits, are covered with them, and Russian travellers state, that enormous quantities of them are met with in Siberia. According to modern accounts, Oceanica and some parts of Africa are very rich in fossil shells; America is not less so; and M. Humboldt has found them on the lofty chain of the Andes, at an elevation of 13,200 feet.

These fossil shells are sometimes divided into *pelagian* and *littoral*. The ammonites, belemnites, nautilites, gryphites, terebratulites and porpytes or lenticular stones, &c. belong to the first class; while the greater part of the other marine shells belong to the second, although they are often mixed with the former. Fossil shells have also been divided into terrestrial, fluviatile, and marine. The greater part of them belong to the marine species. Lamarck, Ferussac, and Brongniart, in France; Sowerby, in England; Brocchi and Rema, in Italy; and Goldfuss, in Germany, have contributed most to the advancement of this department of science.

Other marine animals have left less abundant remains. Fishes, next to zoophites and molluscous animals, are the most frequent: we find them in Switzerland, in the slaty schist near Glarus in Germany, in the marly bituminous schist of Pappenheim, in the coppery schist of Eisleben, in the stinking schist of Ochningen, in Egypt and in Syria, in the calcareous rocks on the coast of Coromandel, and in several mountains of China. The place which has furnished the greatest number is Mount Bolca,

near Verona in Italy. The size of some of the fishes of the old world must have been enormous, if we judge by their teeth. The glossopetræ, or shark's teeth *(squalus maximus)* prove this distinctly. The labours of Cuvier, De Blainville, and Agassiz, in regard to fossil fishes are those alone which deserve to be noticed.

The erpetholites are less numerous than the ichthyolites, and appear to have existed at a period posterior to fishes. Almost all the known fossils of this class belong to the chelonian or tortoise tribe, the large saurian or crocodile tribe, and the ophidian or serpent tribe. The gigantic and extraordinary reptiles which have recently been discovered in England, Germany, France, &c. belong to the saurian order. These are the geosaurus, a sort of lizard 13 feet long, which lived in the rivers and pools of the ancient world; the megalosaurus, another gigantic lizard, allied to the crocodile, which was more than 30 feet long; the mesosaurus of the learned English geologist Conybeare, a reptile 20 or 24 feet long, which seems to have been the connecting link between the saurian reptiles without and those with palatine teeth; as well as the ichthyosaurus and plesiosaurus of Cuvier, species at present unknown in our globe.

An entire tortoise has been found in the sandstone near Berlingen. In the neighbourhood of Brussels, at Aix in Provence, and in the quarries of the great Charonne near Paris, different species of fossil tortoises have been discovered. A great number of crocodiles have been found in the coppery schists of Thuringen, and in the clayey deposit of Elston in England. The most famous are those which have been detected in the vast quarries of Maestricht under a large mass of limestone. The *crocodilus cadomensis* found in the quarries of Germany, half a league from Caen, appears to be the best preserved of the genus. The celebrated fossil of Œningen, which was for thirty years looked upon as a true anthropolite, is only a batrachian reptile, allied to the salamander and proteus.

Insects and birds, so abundant in the globe at present, appear to have been rare in the former world. The few entomolites or fossil insects, discovered by naturalists, belong to the arachnides and annelides. Some impression of insects have been observed along with the vegetable remains, the greater part of them however are still doubtful. These animals are found in the largest quantity, and in the best state of preservation in amber. We find ornitholites or fossil birds mixed with mammiferous fossils, in the horizontal strata of the secondary rocks, and in the alluvial deposits; they are entire or in fragments, and in different states. The existence of fossil feathers is still doubtful, although some naturalists pretend to have them in their collections. Petrified eggs, however, have been found in Auvergne, with their shells perfectly preserved. It is singular that fossil birds have been found in the neighbourhood of Paris in much larger quantity than in any other part of the globe. Cuvier has discovered twelve species, two of which at least appear to have been birds of prey. All the birds similar to them have disappeared, or have retired to some countries still unknown to Europeans, and little visited by travellers.

Individuals belonging to the class mastodolites or fossil mammalia are more common than ornitholites, entomolites, erpetholites or ichthyolites. They are either isolated or scattered, distributed in families or mixed together. Some of them have only left impressions, but this is a rare occurrence, others have been petrified. The skeletons of some of them are as entire as if they had come from an anatomical theatre, whilst in other localities the bones have been broken and rolled by the action of water.

This department of zoology has been much advanced by the labours of Pallas, Camper, Sœmmerring, Blumenbach, Rosenmüller, Faujas, Home, &c. but it is to Cuvier that it owes the place which it now occupies in natural science. This celebrated naturalist has contributed more towards it than any one else, not only by his beautiful and numerous discoveries, but by the solid principles upon which he has founded it. He has been able to determine and classify the remains of more than 150 fossil quadrupeds, 123 of which belong to the mammalia. Of the whole number there are 90 species wholly unknown; 11 or 12 have so strong a resemblance to known species as to be considered identical with them, and the rest are in many respects similar to known species.

Many countries contain fossils belonging to this important class. But there are certain places which are famous for particular species. Thus the palæotheriums and anoplotheriums are only found in the neighbourhood of Paris. The bones of the rhinoceros are met with in larger quantity in the valley of the Arno than in all the rest of Europe. The Giants' Camp, near Quito in South America, is celebrated for the mastodons with straight teeth, and the borders of the Ohio in North America for the large mastodon. Auvergne, that classical land of volcanoes, has recently fur-

nished more than fifty new species of fossil animals unknown to Cuvier. They are about to be described in the work of MM. Bravard, Jobert, and the Abbé Croizet. As we cannot enumerate all the fossils of this class, we shall merely notice a few of the most important.

Amongst these animals, the elephant, called mammoth by the Russians, deserves the first place. It was 15 or 20 feet high, covered with a thick red wool, and with long stiff and black hairs, which formed a mane along its back. Its enormous tusks were implanted in jaws longer than those of the elephant of the present day; but in other respects it resembled the Indian elephant. Thousands of carcasses of this animal are met with from Spain to the shores of Siberia, and they are scattered also over the whole of North America. Its tusks are still in such a good state of preservation in cold countries, that they are put to the same use as fresh ivory. Some mammoths have been found with their flesh, skin, and hair entire, and the savage inhabitants of the frozen regions have sometimes fed upon them.

After the elephant comes the mastodon with straight teeth. This gigantic animal was also armed with enormous tusks, and had mammillar or tuberculated teeth, covered with a thick and brilliant enamel. These have furnished for a long time what are called western turquoises. The emains of this animal are pretty common in the temperate regions of Europe, but are less so towards the north. They are found also on the mountains of South America, along with two allied species.

North America possesses numerous remains of the great mastodon, a species larger than the preceding, and rivalling the elephant in height. It has enormous tusks, and its teeth are covered with sharp points; a circumstance which for a long time caused it to be looked upon as a carnivorous animal. A mistake in regard to the number of the grinders, made Buffon estimate the size of this animal as six or eight times greater than that of the elephant.

The rhinoceros must have been much more widely spread in the former world than it is now-a-days. There were four species, three of large size, and all two-horned. The celebrated Pallas has given a description of a rhinoceros with its skin entire, which was found, in December 1771, on the banks of the Vilhoui, a tributary of the Lena.

The fossil hippopotamus is tolerably common in France, Germany, England, and more especially in Italy. It resembles the present African species so much, that an attentive comparison is required to distinguish them.

The megatherium partakes of the generic characters of the armadillo, and also of those of the sloth. In size it equals the large rhinoceros. Its claws must have been of enormous length and power. Its whole frame possesses an extreme degree of solidity. It has only as yet been discovered in the sandy strata of North America.

The megalonix resembled it much in character, but was somewhat smaller. Its claws were longer and sharper. Its remains have been found in Virginia, and on an island on the coast of Georgia.

The gigantic-horned elk is the most celebrated of the fossil ruminating animals. It belongs to a species now lost, and appears to be more common in Ireland than anywhere else.

The fossil horse resembles very much the horse of the present day, but it is only about the size of a large ass. Its remains are found along with those of elephants and rhinoceroses.

We have still to notice two remarkable phenomena which have exercised the ingenuity of geologists, viz. the osseous breccias and the caves filled with fossil bones. The former are the fissures of certain rocks, filled with the bones of ruminantia encrusted in the midst of the concretions which filled the clefts. The principal osseous breccias at present known are those of Gibraltar, of Antibes, and Nice. The bones contained in caves belong chiefly to carnivorous animals. The Blanckenbourg cavern is the most celebrated in this respect.

We have not yet spoken of the remains of the human species, because it is not yet sufficiently proved that the human bones which have been found in caves and osseous breccias are to be referred to the same period as the debris of the extinct animals which accompany them. The best established facts lead to the conclusion, that man did not appear on the earth till after the period of the great inundations which collected so many animals in the alluvial formations, the breccias, and the caves. It is only in the peat formations that he has left any trace of his existence. He is comparatively a recent occupant of the globe, of which he has become master; and as to his appearance on the world, everything confirms the Mosaic account, that he was indeed the last and chief work of creation,

From the whole of the facts which have been collected, we are entitled to draw the following conclusions: That plants and molluscuous animals are the most ancient organized bodies of which traces are found; that fishes are the first of the series of vertebrate animals, and that their remains are much less numerous than those of the testaceous animals, inasmuch as their bodies undergo decomposition more easily, and many species serve for food to others: that the marine reptiles succeeded the first fishes; that several of these seem gradually to pass into the forms of our present reptiles, but that the transition has been so slow, that the crocodiles preserved for 4000 years in the catacombs of Thebes, when compared with those now existing in the Nile, present no distinct difference in anatomical structure; that after the first reptiles the marine mammalia appeared; that the first continents were inhabited by birds, which were succeeded first by herbivorous, and then by carnivorous animals; that man was created subsequent to all the fossil animals, and that we do not meet with any fossil remains of the human species;* that, finally, the different species of animals, traces of which we have detected, prove most distinctly this great truth, so fruitful in philosophical results, that the older the strata which form the crust of our planet are, the more unlike are the animals which they contain to the genera and species which now cover its surface, and that it is only in the last strata that we find animals which present a greater or less resemblance to existing species.

§ 4.—*On the Geographical Distribution of the Human Race.*

MAN has the whole earth as his abode. He can live in every climate, and his habitations reach to the remotest confines of animated nature. The Esquimaux of Greenland dwell as far north as the 80th degree. In the other hemisphere, the bleak and barren Tierra del Fuego supports the wretched Petcheres. The New World, though in general thinly peopled, is inhabited from one extremity to the other. In the old continent, the habitations of man form a collected whole, which is broken in upon only by some sandy tracts, but even in the midst of these deserts, man has peopled the *oases*, those verdant islands scattered over an ocean of sand.

The human body supports, upon the banks of the Senegal, a degree of heat which causes spirit of wine to boil. In the north-east of Asia it resists cold which freezes mercury. The experiments of Fordyce, Boerhaave, and Tillet, prove that man is more capable than most animals of supporting a very great degree of heat. We have no doubt that the human body would resist extreme cold equally well, provided that it retained the power of moving. As the intensity of the cold would scarcely increase in the regions lying beyond the 78th or 80th degree, it is possible that man could sail under the poles as well as under the equator, if he were not arrested by the ice.

As the physical capabilities of his frame fit him for every variety of climate, soil, and situation, man must necessarily be omnivorous, or capable of deriving nourishment from all kinds of food. Without such a capability in man, many parts of the earth would be uninhabitable; for in the cold regions of Greenland, Lapland, Tierra del Fuego (Fire-land), and the shores of the Arctic Ocean, animal food only is to be found; and accordingly we find the people of these deserts in the constant use of it alone. In the torrid zone, on the contrary, everything is unfavourable to the rearing of those domestic animals that would be necessary to feed a numerous population. The number, the fierceness, and the strength of the beasts of prey, the periodical alternations of heavy rains and scorching heats, are the principal obstacles, and they are insurmountable. This deficiency, however, of animal food is compensated by the most valuable vegetable productions; by supplying which abundantly, nature has pointed out to the people of those climates the most suitable kind of nourishment; and, accordingly, a vegetable diet is found to be the most grateful and salubrious, and animal food much less wholesome and less inviting. In the temperate regions, between these extremes, man exhibits more conspicuously his omnivorous character. In these climates, animal food is more or less abundant, and is proportionately made use of, while all kinds of grain, roots, fruit, and other vegetable matters, likewise afford abundant and wholesome nutriment. As we pass towards the polar regions, animal food becomes more and more exclusively used, till we reach the Samoieds and the Esquimaux, who are unacquainted with bread; and as, on the other hand, we approach the equator, grains and fruit constitute a greater and greater proportion of human food. According to their diversity of food, arising from the various circumstances in which mankind are placed, some naturalists have thought it possible to

* Of the more perfect animals, the fossil remains of the *quadrumana* or monkeys, which have long eluded the researches of geologists, have recently been discovered at Sansan, in the department of Gers, in the south-west of France.

classify them; as, *carnivorous* (flesh-eaters), *ichthyophagists* (fish-eaters), *frugivorous* (fruit and corn-eaters), *acridophagists* (locust-eaters), *geophagists* (earth-eaters), *anthropophagists* (man-eaters or cannibals), and *omnivorous*, or devourers of everything. But this classification is one of very partial, uncertain, and difficult application.

The best classification of mankind is that which is based upon the differences that so notoriously exist in respect of the colour of the skin, hair, and eyes, and the form of the skull. Taking the colour of the hair as the leading character, we find in mankind three principal varieties, which Dr. Pritchard calls the *Melanic*, the *Xanthous*, and the *Albino*.* The melanic, or black class, includes all individuals or races who have black hair; the xanthous, or fair class, comprises those who have brown, auburn, yellow, flaxen, or red hair; and the albino, or white variety, comprises those whose hair is pure white, and who have also red eyes. The black variety forms by far the most numerous class of mankind, and is the complexion most generally prevalent. In this class the hair is quite black; but the hue of the skin varies from deep black to a brownish shade. In some races the black is combined with red, as in the copper-coloured Americans; sometimes with yellow or fair complexions, as in the Mongols and the olive-coloured races of Asia and Southern Europe.† The xanthous variety includes all those individuals who have light brown, auburn, yellow, or red hair, with which is almost always combined a fair complexion, which, on exposure to heat, acquires not a black or a deep-brown hue, but more or less of a red tint. The pigment of the eye is of a light colour; a light grey or azure blue is the most common, but it has sometimes various shades of yellow or brown, and occasionally a green yellow tint. This variety, however, passes into the others, so that it is sometimes difficult to say whether an individual be of the xanthous or melanic, or of the xanthous or albino class. This variety prevails in the temperately cold regions of Europe and Asia, and is a particular characteristic of the Gothic stock; but it springs up also out of every melanic race. The Jews and the Arabs are generally black-haired, but some Jews have light hair and beards, and blue eyes; and some of the Arabs are red-haired and have sanguine complexions. Many of the Russians are light-haired, but the mass of the Slavons are melanic. The Laplanders are generally dark-complexioned; but the Finns and other kindred races are xanthous. The greater part of the Tungooses and the Mandchews are melanic, but many of them are xanthous; and the same thing is observed among the South-sea Islanders and the American Indians. The xanthous variety even appears occasionally among negroes, individuals being born among them who are neither negro nor albino, but simply fair-complexioned. The word Albino is not descriptive of any whole race of people, like xanthous and melanic, or its co-relate negro, but is only applied to individual cases, which are exceptions to the colour generally prevalent among the races in which they occur. Albinos have been observed in all countries; but it is principally among the African negroes that they have attracted particular attention, from the complete contrast they exhibit to all the people around them. They are generally termed, when of African origin, *white negroes*, a direct contradiction in terms certainly, but which exactly expresses what is meant: a white individual of a black family. The characteristic of the albino is, that the hair and the skin are perfectly white, without a tinge of any colour, and the iris of the eyes is red. In other respects they are generally formed like other individuals of their race. No instance, we believe, is known of a perfectly black child being born of two white, or fair-complexioned parents; but albinos, or pure-white children of negro parents, are of frequent occurrence; and sometimes part of the same family are albinos, while their parents, brothers, and sisters, are genuine negroes.‡

But though each individual of the human race may be classed under one or other of these terms, tribes and nations cannot, because every tribe and nation (with a few exceptions) though its general character may be of one kind, contains individuals with shades of complexion approaching more or less to the others, and therefore other

* Researches into the Physical History of Mankind, Vol. I.

† We have found this variety very well illustrated in Bishop Heber's Journal:—"Two observations struck me forcibly," says the Bishop; "first, that the deep bronze tint is more naturally agreeable to the human eye than the fair skins of Europe, since we are not displeased with it even in the first instance, while it is well known that to them a fair complexion gives the idea of ill health, and of that sort of deformity which, in our eyes, belongs to an albino."—"The great difference of colour between different natives struck me much; of the crowd by whom we were surrounded, some were black as negroes, others merely copper-coloured, and others little darker than the Tunisines whom I have seen at Liverpool. It is not merely the differences of exposure, since this variety of tint is visible in the fishermen, who are naked all alike. Nor does it depend on caste, since very high caste Brahmins are sometimes black, while Pariahs are comparatively fair. It seems, therefore, to be an accidental difference, like that of light and dark complexions in Europe; though, where so much of the body is exposed to sight, it becomes more striking here than in our own country."—*Heber's Journal*, I. 4, 9.

‡ Caille, in his travels in Africa, was informed that albinos have negro children.

particularities have been sought for by physiologists, upon which to found a classification of tribes and races. The form of the skull has been chosen by Blumenbach, and, according to his observations upon that part of the human frame, he has arranged mankind into five classes: 1. The *Caucasian*; 2. The *Mongolian*; 3. The *Ethiopic*; 4. The *American*; 5. The *Malay*.

I. In the CAUCASIAN RACE, the head is of the most symmetrical shape, almost round; the forehead of moderate extent: the cheek-bones rather narrow, without any projection, but having a direction downwards from the malar process of the frontal bone; the alveolar edge well rounded; the front teeth of both jaws placed perpendicularly. The face is of an oval shape, and straight; the features moderately prominent; the forehead arched; nose narrow, and slightly arched, or at least with the bridge somewhat convex; cheek-bones not projecting; mouth small, with the lips slightly turned out, particularly the lower one; chin full and round. The Caucasians are of all complexions, from the Hindoos and Arabs, some of whom are as black as African negroes, to the Danes and Swedes, and Norsemen, who are fair, with flaxen hair and light blue eyes. In this class are comprised the ancient and modern inhabitants of Europe (except the Laplanders and Finns), the ancient and modern inhabitants of Western Asia, as far as the Oby, the Belurtagh, and the Ganges, such as the Assyrians, Babylonians, Medes and Persians, Sarmatians, Scythians, Parthians, Israelites, Jews, Arabs, and Syrians, the Turks, and Tartars properly so called, the tribes of Caucasus, the Armenians, Persians, Afghans, and Hindoos; the Africans who live on the shores of the Mediterranean Sea, and throughout the Sahara, the Egyptians and Copts, the Abyssinians, and the Guanches, or ancient people of the Canary Islands. To these we need hardly add the European colonists who have settled in America and other parts of the world. The complexion of this class of people seems to depend very much upon climate and the degree of solar heat to which they are exposed; for they are all, without exception, born with light complexions, and become dark only as they grow up, and are more exposed to the sun. Their colour is found to deepen by regular gradation from the furthest north, where the people of this race are very fair, through the olive-coloured people of the south of France, and of Spain, Portugal, Italy, Greece, and the swarthy Moors, till the gradation ends with the deep-black natives of the African and Arabian deserts, and of intertropical India. White seems to be the characteristic of the race, but it is everywhere subject to the influence of climate. The Caucasians are therefore properly enough called the WHITE RACE, though some of them are perfectly black. Their hair, whether melanic or xanthous, is always long and lank, and never woolly like that of the negroes.

II. The MONGOLIAN CLASS has the head almost square; the cheek-bones projecting; the nose flat; the nasal bones and the space between the eyebrows nearly on the same horizontal plane with the cheek-bones; the arches of the eyebrows scarcely to be perceived; the nostrils narrow; the chin slightly prominent. The face is broad and flat, with the parts imperfectly distinguished; the space between the eyes flat and very broad; nose flat; cheeks projecting, round, and narrow; the linear opening of the eyelids extending towards the temples; the inner corner of the eye sunk towards the nose, and the upper eyelid at that part continued into the lower by a rounded sweep. The complexion is generally olive, which is sometimes very slight, and approaching to yellow, or what is called sallow; and none of this class are known to be fair-complexioned. The iris of their eyes is black; their hair black, straight, and strong, but seldom curled, or in great abundance; and they have little or no beard. In this class are comprised the numerous tribes that occupy the central, north-east, east, and south-east parts of Asia; the Chinese and Japanese; the people of Tibet, Boutan, and Indo-china; the Finns and the Laplanders of the north of Europe, and the Esquimaux, who live along the shores of the Polar Sea, in America and Greenland. The colour of the class is influenced in a slight degree by climate; those of them, and those parts of the body most exposed to the sun and the air, being the darkest.*

III. The ETHIOPIC, or BLACK RACE, have the head narrow, and compressed at the sides, the forehead very convex and vaulted; the cheek-bones projecting; the nostrils wide; the jaws long; the front teeth of the upper jaw turned obliquely forward; the lower jaw strong and large; the skull generally thick and heavy. The face is narrow, with the lower part projecting; eyes prominent; nose spread, and almost confounded with the cheeks; the lips, particularly the upper one, very thick; the jaws prominent, and the chin retracted. The skin of this class, and the iris of the eye, are deep black; the hair black and woolly; characteristics that vary less in the negroes than in the two former classes, for this very obvious reason, that the Ethiopic race are to be found native mostly in tropical climates, where there is little variety of temperature; and not like the Mongolian and Caucasian races who are spread over all climates, from the equator to the Polar Sea. In this class are comprised all the natives of Africa to the south of the Sahara and Abyssinia; also the natives of New Holland, Van Diemen's Land or Tasmania, Papua, or New Guinea, New Britain, the Solomon Isles, New Georgia, the New Hebrides, New Caledonia, the Feejee Islands, and also various tribes throughout the Indian archipelago.

IV. The AMERICAN CLASS approaches the Mongolian. The cheek-bones are prominent, but more arched and rounded than in the Mongol, without being so angular, or projecting at the sides; the orbits almost always deep; the shape of the forehead and the crown often artificially modified; the skull generally light. The face is broad, without being flat; the features, viewed in profile, are prominent, and deeply marked; the forehead low, eyes deep-seated, nose rather flat, but prominent. The skin is red, more or less dark, or copper-coloured, and approaching to black, according to climate and other circumstances. The hair is like that of the Mongolian class; and they have little or no beard. In this class are comprehended all the native American tribes and nations, excepting, of course, the Esquimaux, and the descendants of European and African colonists.

V. The MALAY CLASS has the top of the head slightly narrowed, the forehead a little arched, the cheek-bones not prominent; the upper jaws a little pushed forward; the prominence of the parietal bones strongly marked. The face is less narrow than that of the negro, somewhat advancing in the lower part, when seen in profile; the features generally more prominent than those of the negro, the nose full, broad, and thick towards the point, or what is called a bottle-nose. The colour of the skin is brown, or tawny: the hair black, soft, curled, and abundant. In this class are comprised all the natives of the islands of the Pacific Ocean (excepting those already mentioned as belonging to the Ethiopic class); likewise the dominant nations of the Indian archipelago.

Such is Blumenbach's classification, which has been very generally adopted. Some naturalists have reduced the classes to *three*;† considering the Malay class to be only

* Dr. Abel, physician to the last British embassy to China, mentions in his volume of travels, that when any of the Chinese boatmen cast off their clothes for the purpose of leaping into the water to push along the boats, they appeared to be dressed in light-coloured trowsers, though quite naked.

† M. G. Cuvier gives only three distinct well-marked races:—The *white* or *Caucasian*, the *yellow* or *Mongolian*, and the *negro* or *Ethiopian*. He acknowledges, that neither the *Malays* nor the *Papous* (New-Guineaman) can be easily referred to any one of these three great races; but he says, that he does

a sub-variety of the Caucasian, and the American as a variety of the Mongolian. Others carry the number to *eleven* or *fifteen* classes, and not without reason; for all the tribes comprised under each of Blumenbach's five classes, so far from having exactly the same characteristics, really differ in some cases from each other as much as the class under which they are ranged differs from the other classes; and of such varieties the Caucasian class comprises the greatest number. The Ethiopic class likewise comprises a great number of very well marked varieties; and there is really more difference between a Bojesman, a Caffre, and a Soudan-negro, who all belong to this class, than there is between a Malay, a European, and a Caffre, belonging to different classes. From this example, it will be easily perceived that the division of mankind into three or five, or any small number of classes, is extremely arbitrary; and it would be no easy matter to prove that all the people of the world would fall under one or other of them. But this branch of science is still in its infancy; and there is no part of natural history that offers a wider or a more interesting object of study to the scientific naturalist.

Revelation communicates to us the important facts of the common origin of the first race of men, and of the miraculous dispersion of the descendants of the survivors of the Noahic deluge, effected, according to the sacred historian, by a confusion of language; but which may, in all probability, have been accompanied by a change of organization. This is a field of inquiry beset with perplexities; but of one thing we cannot entertain a doubt, namely, that mankind are all the creatures of the same God; and the only questions of real importance concerning their differences are, Whether or not they are all equally susceptible of the same moral and intellectual culture? Will the same causes produce upon all of them the same effects? — and particularly, What are the effects resulting from the domination of one class over another, and of the mixture of races in the same country, produced by alliances and intermarriages?

This last question about the mixture of races, and the domination of one over another, would have been of little importance if the earth had remained divided among them according to laws established for each; if the people of the copper-coloured race had kept exclusive possession of America; if the Mongolian races had never passed the frontiers of Eastern Asia; if the Malays had never been disturbed in their own islands; if the Ethiopians had remained masters of Africa; if the Caucasians had never been disturbed in Europe, and had never gone out of it. But the equestrian tribes of the Mongols have spread from the centre of Asia, and overrun other regions, and extended their dominion not only over other people of the same class, but also over Caucasian races with whom they have intermixed. The Caucasians, in their turn, have not only sought to rule over people of their own class, but have gone to every part of the world, and mixed with every other race. In Africa, they have established themselves along the coast of the Mediterranean and of the Red Sea, and a good way inland from both; on the coasts of Senegal, Gambia, Guinea, Congo, and at the Cape of Good Hope; on the channel of Mosambique and the neighbouring isles. In Asia, they have mixed with the Mongols in Persia; they are masters of India, and of many of the islands between the Indian and the Pacific Oceans, where are found commingled on the same soil Negroes, Mongols, Malays, and Caucasians, having each their own colour, features, manners, customs, languages, and religions. In the Pacific Ocean their dominion is already felt; and there is little reason to doubt that the multitudinous islands scattered over it will ere long become peopled with a European race.

But of all the mixtures of races, the most important, and the most worthy of notice, is that which for more than three centuries has been going on in America. The Caucasians, not content with establishing themselves there, have transported to the same soil millions of African negroes, and even many Malays and Chinese. The North-American Indians have always retreated before the intruding Caucasians, and their numbers are diminishing very rapidly; they seem, in general, to be incapable of civilization, and to be instinctively repugnant to mingle with the whites. But this is not the case with the negroes, who are very numerous in the West India islands, in

not find the characters of the former sufficient to distinguish them from the Hindoo variety of the Caucasian race, and the Chinese variety of the Mongolian; and in regard to the latter (the Pajous), he asks, whether they may not be negroes which have anciently wandered over the Indian sea. The inhabitants of the north of the two continents, the Samoides, the Laplanders, and the Esquimaux, come, according to some, from the Mongolian race; while, according to others, they are only degenerate shoots from the Scythian or Tartar branch of the Caucasian race. The Americans themselves, he adds, have not yet been distinctly traced to either the one or the other of our races in the Old Continent; and nevertheless they have not characters sufficiently precise and constant to form a particular race.—*Regne Animal*, tom. i. 1829.

the southern states of North America, and in the northern and eastern countries of South America; for their numbers multiply in as great, if not in a greater proportion, than the numbers of the Europeans. In Mexico and South America the indigenous races have continued to multiply since the conquest, and the intermarriages of these people with Europeans, Negroes, and Malays, have produced new varieties, insomuch that the population of that part of the world exhibits phenomena of which the state of things in Europe could never have given us the least idea. We shall briefly describe the result of the intermarriages to which we have alluded: —

Children produced by the mixture of different classes exhibit the medium complexion and features (or nearly so) between their parents; a law that holds universally good, so far at least as climate and other external physical circumstances are concerned, these apparently making not the smallest difference. From a refinement of vanity, the people of Spanish America have invented different names to distinguish the offspring of the various intermixtures of the dark-coloured races with the whites, and among themselves. In the first generation, the children of a European and a negro are called *mulattoes*.* In colour, figure, and moral qualities, the mulatto is a medium between the European and the African. The colour is more or less yellow, brown, or tawny, according as the European father may have been fair or dark, and the features are a medium between those of the parents. There is no redness of the cheek. The hair is curled and black, but longer than that of the negro, and the iris is dark. In cleanliness, capacity, activity, and courage, they are decidedly superior to the negroes.

Europeans and mulattoes produce *tercerons* (sometimes also called *quarterons*, *moriscos*, and *mestizos*.) The hair and features are European, the former having nothing of the grandmother's woolly curl; the skin has a slight brown tint, and the cheeks are red. In the Dutch colonies they have often blue eyes and fair hair. In political and civil rights, these, in countries where slavery exists, are classed with the mulattoes.

Europeans and tercerons produce *quarterons* or *quadroons* (*ochavones*, *octavones*, or *albinos*), who are not to be distinguished from whites; but formerly (in Jamaica at least), they were not entitled to the same legal privileges as Europeans or white creoles, because there is still a contamination of dark blood, though no longer visible. In the fifth generation, the children of Europeans and quarterons are called *quinterons* (or *puchuelas*), but they have no remaining trace of the alleged impurity, so that even the law was satisfied that they were sufficiently white to enjoy their protection, and the privileges of freedom. By an opposite course of proceeding, the mulatto offspring of Europeans and negroes may be reduced to the African character. If a mulatto be paired with a negro, and the children again and again with negroes, the fourth generation is perfectly black.

The offspring of Europeans and Indians are named *mestizos* or *mestees*. The hair is black and straight; the iris dark; the skin varies according to the tint of the American parent. The mestizo is much lighter than the mulatto; and, as many American Indians are nearly as fair as Europeans, mestizos are often not distinguishable in colour from the latter. "A mestizo," says Humboldt, "is in colour almost a pure white, and his skin is of a particular transparency. The small beard, and small hands and feet, and a certain obliquity of the eyes, are more frequent indications of the mixture of Indian blood, than the nature of the hair."† European fathers and mestee mothers produce *quarterons*, *quatralbi*, or *castizos*, corresponding to tercerons in the negro breed, and not distinguishable from Europeans. Quarteron women with Europeans produce *ochavons* or *octavons*; and Europeans with ochavon women, *puchuelos*, who are not distinguishable, in any respect, from genuine Europeans.

The offspring of negroes and Indians are called *Zambos* or *Sambos*; sometimes also *mulattoes*. Negroes with mulattoes produce *zambos de mulata* (*griffos* or *cabros*); a European and zambo, a mulatto; an American and zambo, a zambaigo. The offspring of the zambos are styled by the Spaniards, in derision, *cholos*; that of negro and zamba is called *zambo-prieto* (black zambo). In the English colonies, the offspring of a negro or negress, with a mulatto man or woman, is also called *Sambo*.

Similar mixtures of races have taken place wherever two or more of them have intruded upon each other's domains. The Mongolian races of Persia have become almost Caucasian, by repeated intermixture with Caucasian blood; the higher classes always preferring Circassian and Georgian women, or others of kindred race from the Caucasus. At Banka, the children of a Chinese and a Malay are called *leko*; and in India, of an Indian with a negress, are called *bouganese*. At the Cape of Good Hope, the children of a European with a Hottentot are called by the not very elegant Dutch name of *bastaards*.‡

The classifications of mankind, arising out of their various relations in society, will form in part the subject of the next chapter. We conclude the present with a statement of the numbers of the human race, according to the estimates of M.M. Malte-Brun and Balbi, adding, in the words of the former distinguished geographer, "that all the calculations which have been made upon this subject are chimerical, and that it is impossible to state any which shall even approximate to the truth." Our own estimate will be found in the concluding portion of the 3d section of the succeeding chapter.

POPULATION OF THE GLOBE.

	Malte-Brun.	*Balbi.*
Europe, ...	170,000,000	227,700,000
Asia, ...	320,000,000	390,000,000
Africa, ...	70,000,000	60,000,000
America, . . .	45,000,000	39,000,000
Oceanica, . . .	20,000,000	20,300,000
Total, ...	625,000,000	737,000,000

* The term *Creole* is frequently used erroneously as synonymous with mulatto; but it signifies only those who are born in the West Indies or America, of *two* white or *two* black parents, and is never properly applied to people of mixed origin.

† Humboldt's Political Essay on the Kingdom of New Spain.

‡ Lawrence's Lectures.

CHAPTER V.

POLITICAL GEOGRAPHY, OR GEOGRAPHICAL SCIENCE IN RELATION TO MANKIND IN SOCIETY.

IN this chapter, we shall in the first place examine the social condition of man as influenced or modified by external causes, and then proceed to consider the classifications of mankind in respect to language, religion, and government.

§ 1. *The Influence of External Causes on the Social Condition of Man.*

M. VICTOR COUSIN, in his "Introduction to the History of Philosophy," states, that let any country be examined in reference to its physical geography, and it will then be possible to tell *à priori* what is the condition of man in that country, and what part its inhabitants will act in history. Like other general rules, this assertion is liable to exceptions. Take, for example, the vast regions of temperate America and of Australia, and although no change has taken place in their physical condition, in these we find the white or Caucasian race forming wealthy and populous communities, where but a few years since, the thinly-scattered aboriginal tribes found only a scanty and precarious subsistence. It cannot, however, admit of doubt, that a connexion subsists between the state and condition of man and the circumstances in which he is placed; but the branch of science to which this inquiry belongs is as yet in its infancy, and although it has in all ages attracted the attention of philosophic inquirers, we are still at a loss to account for any but the more obvious effects of those physical circumstances to which mankind are undeniably subjected, and of which the greater number of them are so completely the creatures.

The object to the attainment of which man first directs the exercise of his physical powers and rational faculties, is a sufficiency of food, and a protection from the elements by raiment and a dwelling-place. In these exertions originate all his skill in the arts, and all his knowledge of science. Hence we must expect to find the full expansion of man's powers, not in regions of the globe where, on the one hand, the physical circumstances of a country may be too rigorous to admit of improvement, or, on the other, where an enervating climate, and an abundance of aliment spontaneously yielded by the soil, obviate the necessity of human exertion, but in those warmer portions of the temperate zone, where nature yields everything abundantly to industry, but little or nothing without it, and where there are physical obstacles to be overcome, sufficient to call forth man's higher powers, without overwhelming him with difficulties. Yet even this much cannot be stated without exceptions; for under the equator itself we find in the Malays an example of a race as acute, intelligent, active, and enterprising as any that the most favoured region of the temperate zone has produced. They are indeed ignorant of science, and depraved in morals, but this condition is owing to circumstances, to which we shall advert in another portion of our work.

In casting a rapid glance over the globe, we perceive at once that the parts that enjoy the mildest and most equal temperature, that most abound in rivers, and present the longest line of sea-coast thus possessing the easy means of communicating with other places, are or have been formerly also the most numerously peopled, and the most anciently civilized. In all countries, whatever may be their condition as to civilization, it is along the gulfs, at the mouths, or on the banks of rivers, that we find the densest population. Mankind, in their migrations and their increase, are subjected to laws as invariable as those that guide and control the lower animals. They spread themselves in all the places that offer them the means of subsistence, and stop where they find these no longer; and if we inquire, what is the order which they follow in their migrations, we find they are distributed by families, in the same manner as the waters are divided. If, for example, in any country, we ascend from the mouth of a river to the sources of both the main stream and its tributaries or affluents, we generally find, upon both banks, people belonging to the same family, speaking the same language, or dialects of the same language, and having similar manners and customs. This fact, which seems to exist in all countries, is most easily observed in those of Europe. Several large rivers rise in the Alps, near each other, but run to the sea in different directions. If

we ascend the Po and its affluents, we find on all their banks people of the Italian race; if we ascend the Rhine and its affluents, we find on both banks people of the Teutonic, Dutch, or German race; if we ascend the Rhone and its affluents, we find people who speak the French language; but in the mountains, where all these river-basins meet, there is found a confederation of different people, consisting of French, Italians, and Germans. These divisions are independent of political combinations, and of the kinds of government to which the people are subjected. Thus, those who dwell in the basin of the Rhone all speak the same language, although they are distributed among five independent governments, namely, France, Sardinia, Valais, Vaud, and Geneva. The people of the Rhine are all of the Dutch race, although divided among the governments of France, Switzerland, Prussia, Holland, and many others. The people of the basin of the Po belong all to the Italian race, although some of them live under the Swiss confederation, some under Italian governments, and others are subjects of Austria. Diplomatic arrangements and political violence often disturb the natural divisions of people, but this order, though often shaken, can hardly ever be effaced. Unity of government will be found equally powerless in uniting people who are divided by natural arrangements. Piedmont and Savoy have been for centuries subjected to the same government, and yet the manners, language, and interests of the inhabitants of these two countries are as distinct at this day as before they were politically united. In like manner, in Switzerland, Dutch, Italians, and French are united under the same federal government, yet each race preserves its distinctive characteristics. In France, successive governments have employed every possible means to give unity to the diverse races subject to their authority. The territory has been cut up into shreds; uniform legislation, administration, and systems of education, have been introduced into that country, and yet the desired object has not been attained. In France there are almost everywhere two idioms, that of the country and that of the seat of government; the former spoken by the mass of the population, and having for its natural limits the crests of the mountain ridges; the latter spoken out of its native country only by the agents of government and by the educated classes. Nor are the interests of these divided races less distinct than their languages. The same phenomenon is exhibited on a still greater scale in China. That country is divided into many natural provinces by the water-sheds of its river-basins; each of these provinces has its own dialect and separate interests; and the agents of government and the literary class are obliged to communicate with the people in the vernacular tongue of the latter; but everywhere carry on their intercourse with one another by means of the language of Kiangnan, the seat of the Imperial court under the last native dynasty. India, under the dominion of the Moguls and the British, is another instance; and almost every other country exhibits something of the same kind, varying, of course, with different modifying circumstances.

In considering mankind under a more extended view, we see them divided into great masses, and following the grand divisions of the globe, just as we have seen them divided into great families according to the configuration of their country, and the direction of its mountains and streams. Thus the tribes who dwell in central Asia, and on the banks of the rivers that flow from it to the east and the south, are, almost without exception, branches of the Mongol stock. Those inhabiting the numerous islands of the Pacific ocean belong, with some well-defined exceptions, to the Malay race. The original inhabitants of America were all of the copper-coloured race; and the Africans, except those of the north and the north-east, are all of the black race. Europe, again, and Western Asia, appear to be the native seat of the Caucasian, or white race. Races thus appear to be distributed in a manner still more regular even than plants. The great distinctive races occupy each its own grand division of the continents; the particular families of each race have found their way downwards to the mouths of the rivers, or have ascended to their sources, taking possession of the country through which these flow; and it is remarkable, that the points where the continents, or the great divisions of any of them, touch or make the nearest approach to each other, are often occupied by people belonging sometimes to one race, sometimes to another. The northern outskirts of America are peopled by the Esquimaux, who appear to be allied to the Mongol race; and the coasts of Africa nearest to Europe and Asia are peopled by Caucasians.

We do not know historically how the descendants of Noah were spread over the earth, or how the various characteristics that now distinguish the races of men were produced among them. It is however easy to suppose, that as one family after another left their primitive settlements to wander into new lands, they became more and

more scattered, till at last only a few may have kept together; and these, penetrating into some wilderness, may have lost all the traces of ancient civilization, and recollection of their origin, and become in time the founders of new races modified by the natural circumstances in which they were placed, and the originators of a new kind of civilization peculiar to themselves, and perfectly distinct from that which was making progress in other parts of the world. The Bramins of India have a tradition that their fathers came into the country by the pass of Hurdwar, and possessed themselves progressively of the banks of the Ganges and its affluents even to the sea. The Chinese have a similar tradition of the founders of their empire, who, they say, had their first abode in the mountains of the north-west, and gradually took possession of the plains as they became more and more fit for occupation, by the drying up of the waters that abounded in the land. The Indo-Chinese, who possess the eastern peninsula of India, and are all of kindred race, appear also to have descended in separate bodies from the northern mountains, along the courses of the rivers. In that peninsula, the three great valleys that form the mass of the country are each occupied by a people speaking the same language, but a language distinct from those spoken in the other valleys. We have also a very familiar illustration in the history of one class of European settlers in the native forests of America. The *squatters*, those pioneers of colonization, who proceed into the wilderness, and settle themselves for a time on particular spots, become, as a natural consequence of the circumstances in which they are placed, very savage; and were their movements not rapidly followed up by settlers of a better class, they would, at no very distant period, although the off-sets of a highly civilized community, become as wild as the red men they supplant, and lose, most probably, all remembrance of their original country, and the manners and customs of their fathers.

But in whatever manner it may be accounted for, it is not less the fact, that as the various regions of the earth have become successively known to those Asiatic and European nations, of whose historical records we are in possession, from the earliest dawn of history down to the date of the latest voyage of discovery, all of these have been found already possessed by races of people varying, according to circumstances, in their degree and kind of civilization. And whether we consider them to have degenerated from the civilization transmitted from the antediluvian world by Noah and his sons, or to have been originally as savage as some of them are found at the present day, nothing seems more easy than to determine the cause of the successive development of some, and the stationary condition of others, although both may be found in the same vallies, or along the course of the same rivers. Looking at those parts of the globe where civilization has made the least progress, we find, as we have already observed, that there population is the scantiest; and where concentrated, it is in bays or on the sea shore, or at the mouths of rivers and the course of their streams. If the inhabitants wander into the interior of the country, it is only for the purpose of hunting, and even in these excursions they generally follow the course of the waters, (whether ascending them or descending.) This is observed in the north of Asia, throughout America, in New Holland, and wherever else cultivation has made little progress. When a coast, however fertile its soil, is not intersected by any considerable stream, it is either entirely deserted; or only occasionally visited by some wandering tribes. Thus a great part of the north-east coast of Asia, a still more considerable part of the west coast of America, and almost the whole coasts of Arabia, Africa, and New Holland, are either uninhabited or have a very scanty population. Wherever we find a people half barbarous, in the uncultivated interior of a country, it is only when they have already reached the pastoral state, like the Bedouin Arabs, the Mongols, and Tartars of Central Asia, and some tribes of South America. The causes which, in uncultivated countries, thus carry the people to the banks or the mouths of rivers, are easily discerned. The quantity of food which the earth spontaneously supplies for the use of mankind is extremely limited. A people, therefore, who have not yet advanced to the pastoral or the agricultural state, are attracted towards lakes, rivers, and gulfs, where they enjoy at once the advantages of fishing and hunting. Animals are drawn to the same places by a more plentiful supply of food, and there of course they are most readily met with, and most easily become the prey of man. In such places, also, alimentary plants are more abundant, a greater depth of vegetable earth or mould rendering the soil more fertile; the climate is milder, the atmosphere is more humid, and the air circulates more freely than in the interior districts. Such localities are also found to possess a greater variety of plants, the action of the waters and the winds spreading over the valleys, the various vegetable productions of the higher grounds. A valley traversed by a river may generally be repre-

sented as a triangle, whose top is formed by the junction of two hills and the base by the seashore; hence it follows, that the more nearly we approach the mouth of a river, the more extensive is the space of vegetative earth that we meet with, and the nearer we are to the spot where cultivation must have originated.

Besides supplying from their bosom so considerable a part of human subsistence, multiplying in certain places the species of plants, and attracting animals, rivers afford the means of transport across wastes otherwise untraversable. Lands abandoned to nature are almost always covered with dense forests, that bear no resemblance to those met with in cultivated countries. In the latter, the underwood is cut down and removed; the trees seldom or never fall through age; the surface-water is carefully drained off, and the channels of the brooks and rivers kept clear. But in the natural forest, nothing is cleared away; shrubs and bushes cover the ground, and obstruct the passage of the hunter or traveller. The trees, left to the period of their natural decay, fall through age, and contribute to render the country inaccessible. Lastly, the leaves and other vegetable remains, and earth carried away by the rains, stop the flow of the waters, turning them from their natural course, and converting immense plains into marshes, which soon abound in insects and reptiles. Into such places even animals cannot without difficulty penetrate, and when man attempts to follow them, he effects his purpose only by keeping in their track, along which he pursues his way with pain and toil, and through a thousand dangers. Rivers in wild wood-covered countries do not present the same facilities for navigation, as in cleared and cultivated regions. Large trees often fall into their channels, and by obstructing the current render navigation dangerous. Still, however, in spite of difficulties of this nature, the inhabitants of the banks of rivers, by whom the art of building canoes has been acquired, find in the waters more available means of transport than those that the land offers. The voyagers need only leave themselves to the current, in order to get through immense tracts of country. The ease of such descents, and the difficulty of returning against the stream, contribute in no small degree to accumulate a population at the mouths of rivers and in gulfs.

The causes which induce savage tribes to fix their abodes in the shelter of some deep bay or at the mouths of rivers, contribute to their further development. From such points as these, cultivation and population gradually ascend the valleys; villages are formed at the confluence of the streams; which by and bye become towns and cities, the centres from which civilization and knowledge pervade the country, and then people begin to forget their past condition and to wonder from whence all their possessions and blessings have flowed.

That progressive developments such as these have often taken place in the world there is little reason to doubt; and the very thing is now in progress before our eyes, on a larger scale than the world has ever before witnessed. Great part of North America is occupied by the basin of the Missouri and the Mississippi and their affluents. A small party of French colonists settled themselves at the mouth of the mighty stream, and built New Orleans. From that point they ascended the river till they met their brethren, who had been, in the same way, spreading themselves along the St. Lawrence; and the two tides of colonization would doubtless ere long have filled the basins of both rivers with a French population. But ere this could be accomplished, their progress was arrested by the counter tide of the equally enterprising and more powerful colonists of another nation, who, taking them in flank, as it were, began to descend from the eastern borders of the great valley, and are now rapidly filling it in the very way we have assumed to be the natural one in the progressive expansion of isolated tribes. They are bringing with them, it is true, the seeds of civilization, and the ready means of rapid improvement; and the number of people that are hurrying continually to the favoured region, will fill more space in the course, perhaps, of a few generations, than the original colonists of Louisiana, left to themselves, would have filled in a thousand years. Such is the influence that waters have upon the distribution and the civilization of mankind; but we must not overlook the fact, that they are only means to an end, and that these means may be rendered useless or mischievous by many circumstances of various kinds.

Having thus seen, in a general manner, the causes which determine a people in the preference which they give to certain places over others, and that contribute to hasten, to encourage, or to arrest their progress, it remains for us to explain the special causes which, in the principal divisions of the globe, have kept their inhabitants in barbarism, or made them advance in civilization. This our limits would allow us to do only very briefly, and therefore we reserve the consideration of them till we describe the various countries, in the body of our work.

Before concluding this section, for much of the matter of which we have been indebted to Mr. Lawrence's "Lectures on Physiology," &c. and Comté's "Traité de "Legislation," it may be proper to advert, briefly, to the important subjects of the *duration of human life*, the *proportion of births to deaths*, and the *relative proportion of the number of the sexes*; all of which, it is believed, are influenced or modified by circumstances external to man, and connected chiefly with his condition in society.

The natural limit of human life seems to be from eighty to ninety years. Few men survive that period; the majority die long before they even approach it. Of all new-born infants, one out of *four* dies the first year; *two-fifths* scarcely attain their sixth year; and before the twenty-second year, *one-half* of the generation is consigned to the grave. The order which Death observes in cutting off his victims is one of the most wonderful phenomena in nature. The causes by which it is effected are too numerous and too complicated to be here considered in detail. The unhealthy nature of certain occupations, the impetuosity of the passions, and the corruption of manners, prove no less fatal to life than the original weakness of the human frame. In general, the *mean duration* of human life is between thirty-eight and forty-two years; that is, out of thirty-eight or forty-two individuals, one dies every year.

This proportion varies in a singular manner, according to sex, localities, and climates, and even from one province to another. In France the mean mortality is one individual in 39.98, or 100 in 3998; whilst it is one in 26.3 in the department of Finisterre, and only one in 53.5 in that of the High Pyrenees. In Belgium and Holland united, the mortality in 1828 was one in 43.8, while in the province of Drenth it was one in fifty-five, and in that of Naumur one in 57.9. In the north of Holland it was one in 34.5, and in Zealand one in 31.4. In Sweden the mortality was one in 44.69, and in Russia one in forty. In England the mean number of deaths is one in forty-nine, while in Wales it is one in sixty.

The mortality is much greater in towns, and especially in large towns, than in the country. In Paris the mortality is reckoned at 1 in 33. Wargentin calculates that in Stockholm 1 man in 17 dies, and 1 woman in 21.* According to Price, there dies in the large towns of England, every year, 1 in 19 or 23; in the small towns, 1 in 28; and in the country, only 1 in 40 or 50.

In the ordinary course of nature, at least amongst civilized nations, the number of births exceeds the number of deaths. But the proportion varies with the situation. In the country, there is frequently 1 born yearly for every 22 of the population. In towns, the proportion is less favourable, being often 1 to 40, more generally 1 to 35. In this respect, climate occasions a remarkable difference. The most healthy climate is not always that in which there are most children born; for example, in Denmark, the proportion of births to the existing inhabitants is as 1 to 31; while in Norway, a healthier country, it is as 1 to 34. In France, the proportion is as 1 to 32. An author who has made very accurate Statistical Researches, has drawn up a table of the average number of children in a family in the different countries of Europe; the following are some of his results:—†

In Sweden, the number of children to a marriage is	3.62	In the Department of the Lower Rhine, along with Jura, in France,	5.02
In Muscovy, in Russia,	5.25	In La Vendée, including Morbihan, Id.	5.49
In Holland,	4.20	In the Department of the Loire, with the Low Alps, Id.	5.54
In Belgium,	5.27	In the Department of the Eastern Pyrenees, Id.	5.17
In a part of Scotland,	5.13	In the Canton of Fribourg,	5.36
In England,	3.50	In Savoy,	5.65
In Moravia and Silesia,	4.81	In the Government of Venice,	5.45
In Bohemia,	5.27	In Portugal,	5.14
In France,	4.21		

We see by these examples, that the ancient opinion, which considered the north as the *officina gentium*, the cradle of nations, although supported by many philosophers besides the antiquary Rudbeck, is altogether destitute of foundation.

The number of births is directly and materially affected by causes of a moral and political nature. The difficulty of finding subsistence is unfavourable to the increase of marriages, and it is only from marriages that a state can hope to see a numerous race of children arise. Libertinism, a community of wives, polygamy and unlimited divorce have never had a salutary influence on population. It has been shown by the most authentic calculations, that of two bodies of individuals, equal in number, that which

* *Mémoires divers sur les tables de mortalité, &c.*, in the Memoirs of the Academy of Stockholm. Vols. xvi. xvii. xxviii. and xxxi.

† M. Benoiston de Chateauneuf, *Notice sur l'intensite de la fécondité en Europe au commencement du xixe siècle*, inserted in the 9th volume of the Annales des Sciences Naturelles, 1826.

lives in the marriage state, produces more children than that which promiscuously indulges in the commerce of the sexes. *The proportion of births to marriages*, on an average, and in a country of some extent, can scarcely be more than five, or less than three births to one marriage. The ordinary proportion, in the most civilized countries of the world, is four births to one marriage. *The proportion* between *births and deaths* is, one year with another, from 101 to 150 for every 100. This last proportion indeed occurs only in some provinces of small extent, and singularly favoured by nature. Every proportion stated as higher than this, in an extensive country, ought to be viewed with suspicion, unless verified by calculations and registers of undoubted correctness and authenticity.

Euler has constructed the following Table, by means of which, we may see at a glance, in how many years the population of a country may be doubled under certain conditions.*

IN A COUNTRY OF ONE HUNDRED THOUSAND INHABITANTS, THE MORTALITY BEING ONE IN THIRTY-SIX.

The Deaths being to the Births, as	*The Surplus of Births will be*	*This Surplus will make of the sum of the Living.*	*The Doubling of the Population will take place in*
10 to 11	277	$\frac{1}{361}$	250 $\frac{1}{12}$ years.
—— 12	555	$\frac{1}{180}$	125
—— 13	722	$\frac{1}{138}$	96
—— 14	1100	$\frac{1}{90}$	62$\frac{1}{2}$
—— 15	1388	$\frac{1}{72}$	50$\frac{1}{2}$
—— 16	1666	$\frac{1}{60}$	42
—— 17	1943	$\frac{1}{51}$	35$\frac{1}{2}$
—— 18	2221	$\frac{1}{45}$	31$\frac{1}{2}$
—— 19	2499	$\frac{1}{40}$	28
—— 20	2777	$\frac{1}{36}$	25 $\frac{3}{4}$
—— 22	3332	$\frac{1}{30}$	21$\frac{1}{2}$
—— 35	4165	$\frac{1}{24}$	17
—— 30	5554	$\frac{1}{18}$	12$\frac{1}{2}$

The same mathematician, founding on data extremely favourable to the propagation of the species, has constructed a table, the general result of which is, that the human race might be tripled in twenty-four years, and that at the end of three hundred years, the posterity of one couple might amount to 3,993,954 individuals.

Taking the total number of the human race at seven hundred millions, the ratio of the deaths to the living population as one to thirty-three, and that of the births to the living as one to twenty-nine and a-half, we shall have, for the whole globe,

	In one Year,	*One Day,*	*One Hour,*	*One Minute,*
Births, .	23,728,813	65,010	2,708	45
Deaths, .	21,212,121	58,120	2,421	40

Whence it follows, that the sum-total of the human race would, in one year, be augmented by an accession of 2,516,692 individuals, were it not for wars and pestilences. This augmentation would, in one hundred years, bring the number of men up to 3,216 millions. The earth might, perhaps, support a still greater number; but all the records of history seem to concur in showing that the increase of the human race has hitherto advanced at a much slower rate.

The *proportion between the numbers of the two sexes* is a matter of great importance, both in statistics and legislation. In Europe there are always more boys born than girls, in the proportion of sixteen to fifteen, of twenty-one to twenty, or, according to others, of twenty-six to twenty-five. On the other hand, the mortality also is greater amongst the male children, in the proportion of nearly twenty-seven to twenty-six; in consequence of which, about the fifteenth year, the numbers of the two sexes are brought almost to an equality; there is, however, still a surplus in favour of the males. But this surplus in the number of the men, even though it were three or four times greater, is carried off by wars, by dangerous voyages, and by emigration, to the casualties of which the female sex are less exposed. Thus, the final result of this is, that in our climates the women are always more numerous than the men. This difference is particularly observable at the conclusion of a long war.

* Euler, Tables communicated to Sussmilch, Ordre divin, chap. viii. §§ 152, 156, 162.

According to Wargentin, it amounted in France, after the seven years' war, to 890,000 in twenty-four or twenty-five millions of souls; in Sweden, after the Northern war, about 127,000 in a population of two millions and a half; and in England, according to the calculations of Rickmann, it was in 1811, 388,886 in 9,538,827 souls, and in 1821, 310,543 in 11,261,437.

Some travellers have imagined, that in warm climates there are more girls born than boys; and as the male sex is liable to more rapid destruction in such climates than in ours, the surplus of women must become very great. The researches of Father Parennin in China, the lists of baptisms kept by the Danish missionaries of Tranquebar, the various censuses taken by the Dutch at Amboyna and Batavia, and the observations made at Bagdad and Bombay, by the judicious Niebuhr, and those which have been made in other countries of the torrid zone, have demonstrated that the number of children of both sexes is not there more disproportionate than in Europe.

It has been commonly computed that a district, in which there are 10,000 infants born yearly, must contain in all 295,022 inhabitants of both sexes, of whom 93,003 should be children below fifteen years, and 202,019 persons above that age. Amongst these individuals, there will be, at the most, 23,250 monogamic marriages (the mean duration of which may be estimated at twenty-one years), 5812 widows, and 4,359 widowers, the rest single.

§ 2. *Of the Classification of Mankind according to their Languages.*

NATION, is a general term, applicable to any people, however much they may differ among themselves in respect to religion, language, and civilization, provided they are subjected to the same sovereign power; or in other words, when they form one body politic, independent of every other. It is also used to signify the people of a region, which has proper geographic limits; that is to say, natural boundaries, independently of the political divisions, or the different languages which they speak. Such are the people of France, Italy, Germany, India, who are all called French, Italians, Germans, and Hindoos, though the first speak several, and the last many different languages; and though the Italians, Germans, and Hindoos, are subjects of many different governments. It is also applied to signify the people of any country whatsoever, who speak the same tongue, and its various dialects, independently of the distances which separate them, of the different bodies-politic of which they form a part, of the religion which they profess, and the degree of civilization they have reached. Thus we give the national name of English, French, Spanish, Portuguese, Chinese, Greeks, Armenians, and Jews, to the numerous colonists, whether families or individuals, scattered over the world, which have sprung from one or other of the nations so called. Geographical limits are always the same, although often overstepped by different races of people; political boundaries, again, have no natural permanence, and the people that constitute bodies-politic become at different times members of different nations in respect of government. *Language*, however, is a permanent characteristic, by which one nation may be always distinguished from another; and various authors have accordingly attempted to classify mankind into various *ethnographic families* or *stocks*, according to the languages that they speak.

Ethnographic stock or family, is a term applied to indicate a group of languages related by many analogies, and of which the members present, so to speak, so many family features, that by means of these, we may often recognise the common origin of nations whose migrations and separations history has failed to record. *Dialects*, generally speaking, are different methods of pronouncing a language; but with the endless varieties thus occasioned, different constructions, and even different words, are often intermingled, so as to give the branches of the same original tongue very much the appearance of being totally different languages.

The researches made by Balbi, for the construction of his *Atlas Ethnographique*, have convinced him that the number of known languages amounts to 2000 at least; but the imperfect state of ethnography, he states, has allowed him to class only 860 languages and about 5000 dialects; of which prodigious number, 143 languages belong to Asia, 53 to Europe, 115 to Africa, 117 to Oceanica, and 422 to America. And, in applying ethnography to the five grand divisions of the world, he has divided all known tongues into five classes, which form, so to speak, the ethnographic map of the world.

I. ASIATIC LANGUAGES, subdivided into, 1. The *Semitic* family, comprising the Arabic, Hebrew, Chaldee, &c. 2. The *Caucasian* family, comprising the Georgian, Armenian, &c. 3. The *Persian*, comprising the Zend, the Parsee, the modern Persian, &c. 4. The languages of the Indian region, viz. the *Sanscrit* family, with the Pali and Hindostanee; the *Malabar* family, comprising the Malabar or Maleyalam, Tamul, Telinga, &c. 5. The languages of Transgangetic India, viz. the *Tibetan*, *Chinese*, *Japanese*, *Laos-Siamite*, *Anamite*, *Rukheng-Barma*. 6. The Tartar languages, viz. Tun

gusse, Mandchou, Tartar or *Mongol, Kalmuck, Turkee, Yakoute*, &c. 7. Siberian languages, viz. *Samoied, Yenesei, Koriak, Kamtchadale, Kourilian*, &c.

II. EUROPEAN LANGUAGES, subdivided into six families: 1. The *Basque* or *Iberian*, including the Basque or Escuara. 2. The *Celtic*, comprising the Gaelic, or Irish, or Erse, the Cymraeg, &c. 3. The *Thrueco-pelasgic* or *Greco-latin*, comprising the Albanian, Etruscan, Greek, Latin, Romance, Italian, French, Spanish, Portuguese, &c. 4. The *Germanic*, comprising the old High-Dutch, the modern High-Dutch or German, the Frisic, the Neider-Dutch, or Low-Dutch of Holland, &c., the Mœsogothic, Swedish, Danish, Anglo-Saxon, English, &c. 5. The *Sclavonic*, comprising the Illyrian, Russian, Cheskian, Polish, Lithuanian, &c. 6. The *Ouralian*, comprising the Finnish, Lapland, Cheremisse, Permian, Magyar or Hungarian.

III. AFRICAN LANGUAGES, subdivided into five groups: 1. Languages of the Nile region, comprising the *Egyptian family*—ancient Egyptian and Coptic, &c.: *Nubian* family—Nouba, &c.; *Troglodytic* family, the Bisharian, &c. 2. Languages of Atlas, forming the family of the *Atlantic languages*—Amazique, Ertana, Tibboo, Guanche, &c. 3. Languages of Maritime Nigritia, viz. the *Mandingo* family—Mandingo, Sousou, &c.; *Ashantee* family—Ashantee, Intor, &c.; *Ardrah* family—the Ardrah-jidah, Benin, &c. The *Foulah, Woloff, Serere*, &c. 4. Languages of South Africa, viz. the *Congo* family—Congo, Loango, &c.; *Kaffer* family—Kaffer, Beshuana, &c.; *Hottentot* family—Hottentot, Saab, &c.; *Monomatapan* family—Monomatapa, Maconas, &c.; the *Galla* family—Galla, &c.; the *Somauli, Hurrur*, &c. 6. The languages of Inland Nigritia, viz. the *Haoussan* and *Bornouan* families; the languages of *Timbuctoo, Maniana, Kallogi, Baghermeh*, &c.

IV. OCEANIC LANGUAGES, subdivided into, 1. The *Malaysian* family—the Grand-Oceanic, Vulgar Javan, Basa-Krama, Malay, Acheen, Birna, Bugi, Macassar, Tagalog, Bissayo, Mindanao, Chamorie, Radak, New Zealand, Tonga, Tahitian, Sandwich-island, Si-deia, Madecasse, &c. 2. Languages of the Oceanic negroes and other tribes—Tembora, Sydney, Dory, Tana, Pelew, &c.

V. AMERICAN LANGUAGES, subdivided into eleven groups, comprising a multitude of names not very easy to pronounce, with which we need not trouble our readers. Those, however, whose curiosity inclines them to seek for information through all difficulties, may peruse the 62d page of the *Principes Generaux*, in M. Balbi's *Abregé de Geographie, Troisieme Edition*. Paris 1837.

Among these numerous languages, fifteen are spoken or understood by a great number of persons, or rather extend their domain over a great number of countries. Of these general languages, six are Asiatic, viz. Chinese, Arabic, Turkish, Persian, Hebrew, Sanscrit; eight European, viz. High-Dutch or German, English, French, Spanish, Portuguese, Russian, Greek and Latin. The Malay is the fifteenth, and belongs to Oceanica.

§ 3. *Classification of Mankind according to their Religions.*

MAN, in his anatomical structure, may in many respects closely approximate to the "beasts that perish," but unlike them, he is endowed with the high privilege of cherishing and acting on religious and devotional sentiments, which form part of his intellectual and moral nature. This distinction between mankind and the lower animals is broadly marked, and universal in its manifestation, for it has not yet been proved that any people devoid of religion exists or ever has existed. Mankind everywhere recognise the existence of beings of a nature superior to their own, and who exercise upon them influences for good or evil. These beings they consequently endeavour to propitiate by prayers, offerings, sacrifices, and other demonstrations of respect and veneration; and the various manners in which the sentiment of veneration is manifested, constitute so many different *religions*, the external acts of the votaries of which, resulting from their religious feelings, are *forms of worship*.

Religions may be divided into two classes; the first comprising all religious systems in which the nature of the Supreme Being is misconceived; the second, comprising those that emanate from the idea of *one* GOD, the creator, ruler, and preserver of all things, however much in most part of them this great truth may be more or less blended with erroneous and superstitious notions.*

The forms of worship connected with the first class may be subdivided into a number almost infinite, so great is the variety of religions which have their origin in the superstition and the ignorance of barbarous races. Mankind, in forming their own systems, when undirected by a higher power, have conceived the most extravagant absurdities, and paid their homage to every object in nature. But as we have neither room nor opportunity for entering into such details as even the most superficial classification of the infinite variety of false religions would require, we shall limit our consideration to two, namely, *Fetishism* and *Sabeism*, which in some respects may be regarded as the sources of the greater number of superstitions and absurd creeds upon which all these religions are based.

FETISHISM is the worship of *fetishes*, a word used by the negroes of the west coasts of Africa to designate the living or inanimate natural objects to which fear, gratitude, or any other affection leads them to address religious worship. The elements, the trees, the streams, fire, in short, everything around them, in which these simple and ignorant people observe good or evil properties beyond their comprehension, are the objects of their worship. Fetishism is the religion of a people who are in the

* Three hypotheses have been formed as to the nature of the universe, viz. *materialism*, or *pantheism*, which supposes that every thing is penetrated with a divine spirit; *dualism*, which admits the existence of two eternal beings, God and matter, or the good and bad principle; and the system of the *Emanists*, which represents all beings, the good as well as the bad, as having emanated from a supreme God.—*Cudworth, Intellect. System*, chap. i. iii. *Dupuis, Origine des Cultes*.

lowest stage of civilization, and who have the grossest ideas of the Deity, and the relations that exist between him and man; but it admits of many varieties, from the absurd and grovelling superstitions of the savages of New Holland and Van Diemen's Land, to the more refined, but equally idolatrous notions held by the less barbarous people of Polynesia, Central Africa, and several parts of Asia and America. Human sacrifices and other acts of revolting atrocity are the distinctive characteristic of these religions. Their ministers are a kind of diviners and sorcerers, called *griots* among several African tribes, *angekoks* in Greenland, *jugglers* in America, and *shamans* in Siberia, where the similarity of name has made the Fetishism of that country be confounded with the Samanism or Dalai-Lama worship that prevails in Thibet and Mongolia.

SABEISM holds a higher rank than Fetishism. It is the worship of the heavenly bodies, the sun, the moon, the stars, either separately or together. This very ancient system, spread over all the world, forms a component part of many other false religions; but it exists unmixed only among a few isolated tribes. It derives its name from the Hebrew word *tsabaim* (the hosts, *i. e.* of heaven.)

Sabeism forms an element of systematic or mythological *Polytheism*, a name under which may be classed all those schemes of religious belief in which the attributes of the Deity are personified by separate divine beings. These systems, though barbarous and irrational, are well suited for poetry and the fine arts, and were received amongst the most civilized nations of antiquity. They are of several kinds, very different from each other, but reducible to *three* classes. The most gross is the religion of the *Egyptians*, in which the attributes of the divinity were represented under the figure of animals, which may perhaps account for their hieroglyphic writing. This may be termed *zoomorphism*. In the religion of the Greeks and Romans, human nature, exalted and embellished, served as a model for divers personifications of the Deity. This constituted *anthropomorphism*, and was varied almost to infinity. The worship of national heroes modified the polytheism of the Greeks and Romans. Veneration for the dead, a very natural sentiment, mingled with all religions; and in some it appears to have formed the chief part. This was the case with the Celts, whom, for other reasons, we class among the Polytheists. Amongst other nations, such as the Syrians, Chaldeans, and Phœnicians, the worship of the stars and of the physical energies of the earth appears to have predominated.

The principal religions comprised in the second class are, *Judaism*, *Christianity*, *Mahometanism* or the religion of *Islam*, *Brahminism*, *Bhuddism*, the *Religion of Confucius*, *Mythological Naturalism*, *Sintism*, *Mayism*, and *Nanekism*.

JUDAISM is a pure Theism abhorrent of idolatry, and those by whom it is professed acknowledge no other revelation but that anciently made to the Jews, as God's peculiar people, through the medium of Moses and the prophets, and recorded in the Jewish sacred books, or the Old Testament of the Christian Scriptures. The Jews have now no existence as a nation, but they live in the expectation of the coming of a Saviour (Messiah), who is to be the founder of a great temporal kingdom, in which they are to be exalted above all other people. The Jews at present known as such, and scattered throughout the world, consist of the tribes of Judah and Benjamin; nothing whatever being known respecting the other ten tribes, except part of the tribe of Levi, which, agreeably to the original distribution of the Levites, is still found among the tribes first mentioned. Those Jews who bear the surname of "Levi" are of the stock of the ancient Levites, and the more sacred portion of the tribe, namely, the descendants of Aaron, are also still known from their name "Cohen" (*i. e.* Priest.) The peculiar office of the latter, in the synagogue or place of worship, is to read the Books of Moses, and on solemn occasions to pronounce the blessing appointed in Numbers vi. ver. 22-27, while the other scriptures and the prayers may be read by any other Jew, he being, in the exercise of his temporary office, called the *reader*. These priests and other ministers must not be confounded, as they sometimes are, with the Jewish *Rabbis* or Doctors, who are a kind of judges in ecclesiastical matters, and interpreters of the law, and who besides are invested with extraordinary powers, extending (theoretically at least) even to life and death. The Jews, in their dispersed condition, offer no sacrifices; they practise the rite of circumcision, keep holy the seventh day of the week as the Sabbath, and observe besides several solemn festivals and fasts, the principal of which are the feasts of the Passover and of Pentecost, the fast in remembrance of the destruction of the Temple, the two feasts of the New-year, the first and second feasts of Tabernacles, and the feasts of Great and Little Purim, in commemoration of the deliverance of the Jews from the machinations of Haman, in the reign of Ahasuerus. Judaism was anciently divided into several sects, the principal of which were the Pharisees, Sadducees, and Essenians, but at present there are only two, namely the *Caraites*, who admit of no rule of religion but the law written by Moses, and the *Rabbinists*, who add to the law the traditions of the Talmud. The Caraites are now reduced to an inconsiderable number, but they are widely spread over several countries, being found in Syria, Egypt, the Desert of Hit (about three days journey, or 120 miles to the west of Bagdad), Constantinople, the Crimea, the Ukraine, Gallicia, Lithuania, and at Doubna, and in the neighbourhood of Kouba, in the regions of the Caucasus. The sect of the Rabbinists includes nearly the whole body of the Jewish people. One branch or sub-division of it, called the *Chasidim*, or by some the Jewish *High-flyers*, sprang up at Miedzyvorz in the Ukraine, between 1760 and 1765. The adherents of this body, who it is said form a majority of the Jewish population of Russian Poland and European Turkey, affect a life of peculiar sanctity and great ardour in their devotional exercises, and probably they are to the other Jews what the Methodists and other pietists are to Protestants generally. The *Samaritans*, now reduced to about 200 individuals, who reside at Nablous and Jaffa, may in some respects be looked upon as a Jewish sect; for though they differ from the Jews in their ceremonies and traditions, and reject the historical and prophetical books of the Old Testament, they acknowledge the divine authority of the Mosaic law, and the five books of Moses. They still sacrifice upon Mount Gerizim or at Nablous. The number of the Jewish people at present is estimated at between four and five millions. The greater portion of this population is found within the limits of Europe, and particularly in the Russian, Austrian, and Ottoman empires. In Asia, the Jews are found principally in Turkey, Persia, Arabia, and Malabar, and some even as far as China. In Africa, they are somewhat numerous in Barbary and the regions bordering on the Nile. A few have found their way into the European Colonies in America and Oceanica.

The Jews, in their chronological computations, date their *era* from the creation, which they consider to have taken place 3760 years and three months before the commencement of the Christian era, which, according to our mode of reckoning, began in the four thousand and fourth year of the world. The Jewish civil year commences with or immediately after the new moon following the autumnal equinox; the ecclesiastical year six months earlier.

CHRISTIANITY extends its beneficent influence over the most civilized countries in all regions of the world. It is divided into an infinity of sects and systems, all professedly founded on the authority of the Holy Scriptures or the writings contained in the Old and New Testaments; of these we can only specify the principal classes:—

A. Christians, who admit, besides the Bible, a supreme human authority in matters of faith. This class is subdivided into the *Latin* or *Western Church*, and the *Greek* or *Eastern Church*.

I. The members of the *Latin Church* denominate themselves *Catholics*; and as they recognise the Pope

or Bishop of Rome for their chief or sovereign pontiff, they are called *Roman Catholics*, and sometimes *Papists*, by those who deny the right of his followers to assume that their sect is the only true *catholic* or *universal* church. The members of the Roman Catholic Church admit the authority of tradition, as well as the decisions of the church assembled in general councils, the latter of which are considered by them to be infallible, although many Catholics ascribe this infallibility also to the Pope. The Romish Church recognises seven sacraments as divinely instituted; it requires a belief in transubstantiation in the eucharist, and in purgatory; it admits auricular confession, the adoration of saints, and worship of images, works of supererogation, indulgences, monastic vows; and enforces, as a matter of discipline at least, the celibacy of the clergy. The church acknowledges not only the first seven general councils assembled before the schism of the Greek Church (except the *quini-sextum*), but also several others convoked by the Popes since the ninth century, the last and most famous of which was the Council of Trent, which sat, with some interruptions, from 1542 to 1563. The Catholics pay great honour and veneration to the Virgin Mary. Indeed she occupies so prominent a place in the Catholic ritual, that some Protestants have, on that account, given popery the name of the *Marian Religion*; and many consider her worship to be nothing else than a continuance of that paid by the ancient Greeks and Romans to their great goddess Artemis or Diana. The Catholic clergy are numerous and wealthy, particularly in Hungary, Spain, Mexico, Peru, and Cuba. There exists among them a hierarchy and ecclesiastical dignities, to some of which, even very lately, considerable temporal power was attached. They assume themselves to be the legitimate successors of the Jewish priests and Levites. Like the priests they offer sacrifices, in the mass, and like both priests and Levites, they lay claim to tithes and the offerings at the altar, in virtue of the divine appointment. The formulas of their worship and their prayers are all expressed in the Latin tongue.

The Roman Church includes within its pale France, Belgium, Poland, Italy, Spain, and Portugal; the greater part of the people of Ireland, and of the Austrian States; about one half of the Prussians; the Swiss, and the inhabitants of the secondary German States; and a considerable number of members in Britain and Holland. In Asia, the *Christians of St. Thomas*, or *Syrian Churches of Malabar*; the *Maronites* of Lebanon; and a great number of united Greeks and Armenians, keep their own liturgies and ceremonies, but recognise the supremacy of the Pope, and the dogmas of the Latin Church. Catholicism is the dominant religion in Mexico, and the New States of South America; and a considerable number likewise of the people of the United States of North America, particularly in Louisiana, Kentucky, Maryland, Columbia, and the Floridas, are Catholics. The members of this church are numerous also in Lower Canada; and are indeed to be found in every European settlement throughout the world.

II. The *Greek* or *Eastern Church* does not recognise the supremacy of the Pope; it rejects the doctrine of the procession of the Holy Spirit from the Son, and it allows communion in both kinds, and a married priesthood. Although the Greeks admit the seven sacraments, which they call mysteries, they do not seem to attach the same meaning to the word as the Latins; it is certain, at least, that they consider two sacraments only to rest on divine authority, namely, baptism and the eucharist, believing the others to have been instituted by the church. They administer confirmation along with baptism, which is made by three immersions. They deny the indissolubility of marriage, and break it for adultery: but they condemn fourth marriages. They do not acknowledge works of supererogation, nor, of course, indulgences. They have, however, like the Romanists, a hierarchy and monasteries, but are subjected to a greater number of devotional practices and more rigorous fasts. The Eastern Church is divided into four principal communions, according to the portion of the proceedings of the first seven general councils, which its members recognise or reject. These four communions are,—

1. The *Greek Church*, calling itself the *Orthodox*, because it acknowledges all the seven general councils, as well as the *quini-sextum*, embraces nearly all the Christian population of the Ottoman and Russian empires, of the kingdom of Greece, and of the Ionian isles, and a great number of individuals of different nations within the Austrian empire, particularly in the Hungarian provinces. The orthodox Greeks recognise for their spiritual head the Patriarch of Constantinople, who has maintained his pre-eminence over those of Antioch, Alexandria, and Jerusalem. *Melchites* is the name given to the orthodox Christians of Syria and other countries of the Levant, who are not Greeks by nation, but only by religion. All the Russians, and the converts they have made among the diversified subjects of their empire, many of the Poles, the Georgians, and some others, profess this religion, and acknowledge the authority of the *Holy Synod* of the Russian empire, in every matter that respects form of worship. The Russians comprehend, under the general name of *Raskolniks*, all the sects whose creed differs from that of the orthodox church, and of these there is a great number, which it is needless to particularize. The Greeks worship the Virgin Mary, by the name of *Panagia* (the All-holy.) They reject sculptured images, but admit pictures into their churches making them objects of worship.

2. The *Chaldean* or *Nestorian* Church. The members of this church recognise only the first two general councils, and the fathers who lived before the Council of Ephesus, where their doctrine was condemned. They ascribe to Christ two persons or *hypostases*, refuse to give the Virgin Mary the rank of *Mother of God*, abhor the worship of images, and regard Nestorius and Theodorus of Mopsuestia as saints. The greatest number of them dwell in Ottoman Asia (chiefly at the village of El-Kosh near Mousul, where their patriarch resides), and in Persia. The Nestorians established in India call themselves Christians of Saint Thomas, as they pretend to have received the gospel from that apostle. Since 1599, when the members of this Indian church were cruelly persecuted by the fanatical hierarchs of Portuguese India, most of them have joined the Latin Church, preserving, however, communion in both kinds, and the marriage of priests. These Christians are called by the Romanists *United Greeks*.

3. The *Monophysite*, or *Eutychian Church*, the members of which acknowledge the first three general councils, and admit only one nature in Christ, namely, the divine nature incarnate. This church is subdivided into three others, called the Jacobite, the Coptic, and the Armenian.

a. The *Jacobite* derives its name from a Syrian monk of the sixth century, Jacob Baradai, or Zanzalus, who travelled throughout Syria and Mesopotamia, for the purpose of uniting the church of the dispersed Monophysites, and who gave them a hierarchy. The spiritual head of the Jacobites takes the title of Patriarch of Antioch. He is named Ignatius, and resides at Kara-amid, or Diarbekr, in Ottoman Asia. The Jacobites have adopted the worship of saints and images. A great part of them are united to the Roman Church, keeping, however, some particular rites.

b. The *Coptic*, the members of which are named Copts or Christians of Egypt, Nubia, and Abyssinia. The Copts adopt the worship of images; and in two peculiarities are distinguished from other Christians, namely, the use of circumcision along with baptism (more, however, as a national custom than as a religious ceremony), and the observance both of the Lord's-day and a part of the Jewish Sabbath. Their patriarch resides at Cairo, but he takes the title of Patriarch of Alexandria and Jerusalem. He names a vicar-general for Abyssinia, with the title of Abuna.

c. The *Armenian* Church, to which almost all the Armenians belong, acknowledges few holidays, and condemns the worship of images. It is superintended by four patriarchs, of whom the principal, and bearing the title of *Catholicos of all the Armenians*, resided at the convent of Etshmiadsin in Persian Armenia till 1822, when he took refuge within the Russian territory; although it is probable that

he has returned to his ancient residence since that province became incorporated with Russia. Of the other three, one resides at Sis in Caramania, another at Gandsasar, near the Lake of Erivan, and the third at Agathamar, a convent in an island of Lake Van. The members of the Armenian Church form a considerable part of the population of Armenia, and they are spread over several other countries. Some Armenians have united with the Roman Church, and have an archbishop at Nashtshivan on the Don, and another in the Isle of Saint Lazaro in the lagunes of Venice. There are also several thousands of them in the Ottoman empire, particularly at Constantinople, under the superintendence of an independent patriarch.

4. The *Maronite* Church, whose members are called Maronites, after John Maron, a priest of the fifth century, live in Lebanon and Cyprus. They admit the first four general councils, and consequently recognise in Christ one person and two natures; but they are Monothelites, in admitting in his two natures only one will. The greater part of them have united with the Roman Church, preserving, nevertheless, most of their own rites. Their spiritual head, who acknowledges the Pope's supremacy, bears the title of Patriarch of Antioch. He resides at Cannobin, a convent in Lebanon.

Several chronological eras are recognised by the different branches of the Greek Church. The most generally adopted is that of Constantinople, which dates the creation 5508 years B.C. The Copts place the same event in the 5493 year before our era, or, according to their reckoning, 5000 years before the birth of Christ. The Coptic Church also employs the Era of Diocletian or Era of Martyrs, which began on the day when Diocletian, according to general belief, was proclaimed emperor at Chalcedon, 29th August A.D. 284, although in reality that event took place some months later. The Armenians date their era from the 9th July A.D. 552. The Greek civil year begins the first of September, and the ecclesiastical towards the end of March. The Armenian ecclesiastical year begins on the 11th of August.

B. Christians, who, in matters of faith, acknowledge no other authority than the Bible, may be divided into *Unitarians* and *Trinitarians*.

I. All Christians who deny the three persons in one godhead, may be called *Unitarians*, or *Anti-Trinitarians*; and under this name may be classed the *Arians*, the *Unitarians*, properly so called, and the *Socinians*.* The origin and distinctive tenets of these different sects belong more to the province of the theologian than that of the geographer, and it may be sufficient here to remark, that Unitarians are found in every country. The Socinians are not very numerous. The greatest number of them dwell in Transylvania, where they enjoy full liberty of conscience, and the free exercise of their public worship. They are found also in the Prussian states, in Holland, Britain, and the United States of America.

II. *Trinitarian* Christians form the greater bulk of the body called *Protestants*, a name originating at the period of a diet of the German empire, held in 1530, at which the princes and states attached to the opinions of the reformers of the then existing church, *protested* against any law that should prohibit innovations in religion. Protestants receive the Bible as a divine work, rejecting, however, as apocryphal, several books which the Council of Trent declared to be canonical; they recommend the reading and the study of the holy scriptures, of which they have made many translations into their vernacular languages, regarding however none of these as authentic, but referring always to the original text as the sole authority. It is a tenet of Protestantism that God has given to mankind, besides revelation, two grand lights, namely, *reason* to understand the word, and *conscience* to be the guide of conduct. Protestants reject every human authority in matters of faith, even that of councils. They receive nevertheless, not as a law, but as conformable to the Bible, the canons of the first four general councils, and the formula which announces the procession of the Holy Ghost, and of the Son: consequently their creed is so far conformable with that of the Roman Catholics. They admit only two sacraments; baptism and the Lord's supper. They communicate in both kinds, reject transubstantiation and the sacrifice of the mass; deny the lawfulness of monastic vows, the holiness of celibacy, the indissolubility of marriage, the merit of good works, and the virtue of indulgences. They reprobate the invocation of saints, the worship of images, auricular confession, the difference between venial and mortal sins, the remission of sins by human authority, extreme unction, purgatory, and the spiritual authority of the Pope and the Church. Their ministers are not priests; and ordination (except among Episcopalians,) is only a religious ceremony by which candidates are acknowledged and received by their brethren into the clerical body, and which conveys no spiritual authority. Confirmation, confession, and the nuptial benedictions, they regard only as religious ceremonies of human institution, which may be dispensed with. They have entirely suppressed extreme unction. The grand division of Protestants is into *Lutherans*, *Calvinists*, and *Arminians*; but of each of these there are many varieties. There are also numerous sects that cannot be classed under any of these great divisions; but as, in short, the divisions of religious opinion among Protestants upon minor points, are extremely multifarious, it would be vain to attempt to particularize them in a limited compass. We shall therefore notice only a few of the more considerable and important of their churches and sects, using the latter word in no disrespectful sense, but as applied to every religious party whose tenets are not anywhere embraced and patronized by the State.

1. *Lutherans* derive their name from Martin Luther, who began the reformation in 1517. They however denominate themselves *Evangelicals*, or *Adherents of the Confession of Augsburg*, which is their official name in Germany and France. This latter name they derive from the famous Confession, written by Melancthon and presented to the Emperor Charles V. at the diet of Augsburg in 1530, by the princes and states who had embraced the opinions of Luther. The Lutherans are distinguished from other protestants by the mystical manner in which they express themselves with regard to the real presence in the Eucharist. Rejecting transubstantiation, they nevertheless admit the real presence, and say that believers eat the true body, and drink the true blood of Christ, in eating the bread and drinking the wine, *in, cum, et sub pane et vino*; so that the bread and wine although consecrated preserve their own nature so long as they remain undistributed to believers, and are not to be adored in any case. They use unleavened bread in their communion like the Romanists. They do not absolutely condemn a hierarchy, but at the same time do not admit its divine institution; and their prelates are subject to the sovereign prince, who is always invested with the spiritual supremacy. In Sweden, the Lutherans have archbishops and bishops, who form one of the four orders of the legislature. In Denmark, Norway, and Iceland, these dignitaries have no prerogative that gives them political influence. Lutheranism prevails in Prussia, Sweden, Denmark, Norway, Hanover, Saxony, Wurtemburg, and other German states; in the Baltic provinces of Russia; and it reckons many members in Hungary and other provinces of Austria; in the United States of North America, and in the Swedish and Danish colonies.

2. *Calvinists* are named from *Joannes Calvinus*, or *Jean Cauvin*, a Frenchman of Noyon, who first taught his opinions at Geneva and in France. They were formerly called *Hugonots* in France,

* The *Arians* derive their name from Arius, a presbyter of Alexandria, who, about the year A.D. 319, promulgated the opinions held by him respecting the nature of the Godhead, which, six years afterwards, were solemnly condemned by the celebrated council held at Nice, (Nicea) in Bithynia. The founders of the *Socinians* were Lelio Sozzini, or Socinus, a Siennese nobleman, and his nephew Faustus Socinus, the latter of whom died in Poland in 1604.

but now take the name of the *Reformed Church*. They wholly reject the doctrine of the real presence; but their distinguishing theological tenets respect the doctrines of original sin, particular redemption, effectual, or as some have called it, irresistible *grace* in regeneration, and the *perseverance* of the saints. These among theologians are termed *the five points*, and frequent have been the controversies agitated respecting them. They exhibit great simplicity in their forms of worship, and reject the use of crucifixes, images, and tapers, which the Lutherans admit as ornaments. The government of the Calvinistic churches is strictly republican. England, Scotland, Holland, the Swiss cantons of Berne, Zurich, Basil, and Geneva; the duchy of Nassau, the principalities of Anhalt, Lippé, and Electoral Hessé, in Germany; the departments of the Gard, Ardeche, Drome, Lot-and-Garrone, and others in France; Hungary, Transylvania, and the military borders of Austria; the United States of North America, and the British and Dutch Colonies in America, Africa, and Asia, are the countries where Calvinism is most prevalent. Calvinists are also numerous in Prussia; and in the United States of North America, they form almost a fourth part of the population. In Scotland and England the Calvinists are divided into two classes, *Presbyterians* and *Congregationalists*: the former of whom are governed in spiritual matters by provincial or general councils, called Presbyteries, Synods, and General Assemblies; among the latter, each congregation exercises supreme ecclesiastical power over its own members. Both classes formerly were named, in England, *Non-conformists*, in respect of their not conforming to the Established Church. In Scotland, the Established Church is Presbyterian in government and Calvinistic in doctrine; the great body of dissenters are also Calvinists, and many of them only seceders from the church in respect to its discipline. The *Puritans*, were those who in 1565 rejected the English liturgy, in order to establish what they deemed a purer form of worship.

Since the middle of the eighteenth century, the Lutherans have made an approach to the doctrine held by the Calvinists respecting the real presence in the Lord's supper; and the latter, in Germany and France, having abandoned some of the rigorous points in the Calvinistic doctrine of predestination, there is now scarcely any difference between them, and they make no scruple to attend each others churches. They even join in the communion of the Lord's supper when celebrated by the ministers of either body, because, in the conducting of this solemnity, both alike make use of the very words of the institution without comment. The only thing that for some time prevented their union into one church, was the diversity of their church government, which is republican in the one case and monarchical in the other. In 1817, however, in the Duchy of Nassau, the two churches were united, under the name of the *Evangelical church*. Similar unions have since taken place in Paris, Frankfort-on-the-Main, Prussia, Bavaria, Baden, Electoral Hesse, Grand-ducal Hesse, Anhalt-Bernbourg, Waldeck, and other parts of Germany.

3. The name of *Episcopalians* is given to a numerous body of Protestants, who, in addition to the leading doctrines of protestantism, maintain the divine institution of episcopacy, and the unbroken transmission of the apostolic ordination of the clergy. At the head of the Protestant Episcopal churches may be placed the *Anglican*, or *Church of England*, which is the established church both in England and Ireland, although in the latter country its communion is adhered to only by a small minority of the population. The doctrines held by the Anglican church are contained in thirty-nine articles of religion, respecting some of which many disputes have arisen as to whether they are most Calvinistic or Arminian in their bearing. In its form of worship, this church has preserved so much of the Romish liturgy, priestly costume, and ceremonies, as is consistent with the Scriptures. It has also retained a hierarchy, only substituting the King as the spiritual head of the church instead of the Bishop of Rome. Its archbishops and bishops are lords of parliament, and are in reality appointed to their high station by the King, although a form of election is nominally vested in the Dean and Chapter of the different Sees. Of late years English colonial bishops have been appointed for Jamaica and Barbadoes, in the West Indies; Calcutta, Madras, and Bombay in India; Montreal, Nova Scotia, Quebec, Toronto, and Newfoundland, in British North America; and one also for Australia.

Episcopalians are somewhat numerous in Scotland, particularly in the northern counties. The Scottish Episcopalians are, however, completely independent of the English church. There are also many Episcopalians in the United States of North America, some of whom have reduced the thirty-nine articles to ten, and abolished the use of the Athanasian Creed. The Moravians are Episcopalians.

4. The *Congregationalists*, or *Independents*, regard each congregation as a distinct part of the whole visible church; in other words, as a church possessing the full powers of self-government, without subjection to any personal head or ecclesiastical body. Their doctrines are almost identical with those held by the Church of Scotland, only they reject written confessions of faith as unscriptural; their churches are numerous both in Britain and North America, particularly in New Hampshire, Vermont, Massachusets, and Connecticut.

5. The *Arminians*, or *Remonstrants*, are so called from James Harmsen, or Arminius, a Dutch minister, and from a remonstrance which his followers presented to the States of Holland in 1609. Arminius, in combating the doctrine of predestination and other Calvinistic tenets, found many partizans, and his opinions are now very prevalent among Protestants, but his followers nowhere form separate churches. They are most numerous in Holland and England.

6. The *Baptists*, although sprung from the *Mennonites* or *Anabaptists* (i. e. Re-baptisers), a sect at first disgraced by the fanatical and lawless excesses of its adherents, are remarkable for peaceable manners, industrious habits, personal probity, and zeal in propagating the gospel. They acknowledge no person or ecclesiastical body as judge in matters of religion; have no confession of faith, and in respect to the Bible, they leave every one at full liberty to exercise the right of private interpretation. They differ among one another on many points, such as the lawfulness of infant baptism, which is denied by the *Anti-Pædo-Baptists*, but all agree in administering baptism to adults as an indispensible rite, and in reprobating unnecessary oaths, as well as profane swearing, and the use of arms. They are most numerous in the United States of North America, where they are supposed to form a sixth part of the population. The states where they are chiefly found are Maine, Rhode-Island, Virginia, North and South Carolina, Georgia, Alabama, Mississippi, Tennesee, Kentucky, Indiana, and Illinois. There are also many of them in Britain and Holland; in the southern provinces of the Russian empire, and in the Prussian governments of Dantzic and Marienwerder. Their missionaries, both British and American, are extensively scattered over many regions of the globe, particularly the East and West Indies, and the Islands of the Pacific.

7. The *Quakers*, a body of benevolent enthusiasts, calling themselves the *Society of Friends*, were founded about the middle of the seventeenth century by George Fox, a native of Drayton in Leicestershire. They believe in the Trinity, the fall of Adam, the promise of a Redeemer, and salvation by Christ; but reject the Calvinistic doctrines of election and reprobation, and admit neither types nor rites, not even the sacraments of baptism and the Lord's supper. Four maxims form the basis of quakerism. 1. The civil power cannot exercise any authority in matters of religious belief; 2. Oaths required by civil authority are unlawful; 3. War is unlawful; consequently violence is not to be met by resistance, nor is self-defence to go the length of shedding blood, or endangering the life of an enemy; 4. A set ministry is unlawful; so likewise is the payment of tithes, and rates for the support of an established church and clergy, although no resistance is to be made to the levying of these when effected by legal process. The Quakers are plain and unvarying in their dress; and their houses, while furnished with all that comfort and usefulness require, exhibit nothing gaudy or superfluous. They disapprove of theatrical amusements, games of chance, cards, lotteries, idle discourse, useless

reading, singing, and hunting; and banish from their conversation the words *hazard*, *chance*, *destiny*, and *fortune*, as an insult to Providence. In addressing themselves to others, they will not say "you" to an individual, but, as the French express it, they "thee" and "thou" every body (ils tutoient tout le monde.) They are remarkably industrious in business generally, although their pursuits are more directed to trade and commerce than to manufactures or agriculture; and many of them are wealthy. They are found principally in England and the United states of North America, and are most numerous in Pennsylvania, which was originally colonized by Quakers carried thither by the celebrated William Penn.

8. The *Moravian Brethren*, or *Hernhutters*, derive the former of these names from the *Bohemian and Moravian Brethren*,* in whom the sect originated; and the second from the establishment which was founded in 1721 at Herrnhuth, near Zittau in Upper Lusatia, upon the domain and under the protection of Count Zinzendorf, who then gave a new form to the system first adopted by the brethren, and ultimately became their bishop or chief. The Moravians believe in the possibility of attaining perfection on earth, by an inward light and a more intimate communion with God. In their liturgy and discourses they make use of mystical terms, and affect a kind of religious sentimentalism. They admit the original corruption of mankind by the fall of Adam, the eternity of punishment, and the necessity of justification by the expiatory sacrifice of Christ, whose divine nature they fully recognise. The rule of their elders, or ecclesiastical chiefs, extends over a great many acts of civil life, such as marriage and the acquisition of property, neither of which can be concluded without their consent. All litigation is forbidden to them, and they form a sort of republic, in which individual interests are always subordinate to the general welfare. They pay particular attention to the moral and physical education of children. It is an established maxim of the community never to take any share in religious controversies; hence they have a wide field for the making of proselytes, which is farther extended by the establishment or recognition of three divisions or classes of their body, corresponding to the distinctive differences of the Moravian, the Lutheran, and the Reformed churches. They are arduous in the prosecution of missionary labours, and have been instrumental in carrying the blessings of religion and of the useful arts to the remotest and most savage tribes. It is estimated that the Brethren's church forms a community of about 130,000 individuals. They have establishments at Neuwied, Barby, New Dittendorf, &c. in Germany; at Christiansfeld in Denmark; at Neuchatel, Basle, and elsewhere in Switzerland; at Zeist, &c. in Holland; at Fulneck, in the township of Pudsey in Yorkshire, Tytherton in Wiltshire, and other places in England; at Ayr in Scotland; at Gracehill, near Ballymena, in Ireland; at Strasbourg, &c. in France; at Sarepta in Russia; Tranquebar in India; in Guinea; Danish Africa; at the Cape among the Hottentots; at St. Thomas, St. Croix, and St. John, in the Danish West Indies; in Jamaica; at Nain in Labrador; at New Herrnhuth, Lichtenfels, &c. in Greenland; at Bethlehem and Nazareth in Northampton county, State of Pennsylvania, and at other places in the United States of North America. Bethelsdorf, near Herrnhuth, a little town in Prussian Saxony, is the seat of their directoral college, which is composed of twelve members chosen by the Synod.

9. The *Swedenborgians*, or members of the *New Jerusalem Church*, derive the first of these names from Emanuel Swedenborg, a Swedish nobleman, who died in London in 1772, and who was known in the scientific world as a member of the Academy of Sciences of Stockholm, and as a distinguished mineralogist. Swedenborg, in liveliness of fancy, has perhaps never been exceeded by any other mystick. He not only alleged that he held frequent communications with spiritual beings, and was the recipient of innumerable revelations regarding the worship of the Deity, the meaning of the Scriptures, and the state of man after death; but in his writings, which are voluminous, he gives what may be termed statistical details of heaven, hell, and the planetary worlds, and minutely describes the manners of their inhabitants. The sentiments held by the Swedenborgians seem to tend to the recognition of a scheme of universal pardon. Otherwise, they believe in the Holy Scriptures; acknowledge the divinity of Christ, in whose single person alone, and not in the Godhead, they invest the Trinity; and they insist on the necessity and efficacy of a life of charity as conducive to regeneration and ultimate salvation. Although Swedenborgism had Sweden for its birth place, it can boast of but few adherents in that country, and these are chiefly confined to Gothland. Some individuals belonging to the sect are found also in Holland, and in Appenzell and St. Gall in Switzerland. England, however, is the country in which they appear to be most numerous, especially in London, Bristol, Birmingham, Derby, Hull, Boston, and Manchester, the last of which places seems to be the chief seat of their community. Some congregations are found in Scotland, but these are confined to the metropolis and one or two of the large towns. They have places of worship, or as they call them, *temples*, in Philadelphia, Baltimore, New York, &c. in the United States, and preaching stations in the East Indies and Southern Africa. They indulge in the singular belief that the New Jerusalem Church exists in a perfectly organized state in the interior of Africa.† The celebrated travellers, Sparrmann and Nordenskiold, were Swedenborgians; so also was Charles XIII. before he ascended the Swedish throne.

10. *Methodism* originated about the year 1730, with some students at the University of Oxford, to whom the name *Methodists* was at first applied derisively, on account of the extreme regularity and strictness which they affected in their manners and in the performance of their devotional exercises. Their leaders were John Wesley and James Morgan, the former of whom, along with George Whitefield, a most eloquent and persuasive preacher, laboured for a number of years in different parts of the United Kingdom and America to disseminate the principles of Methodism. In 1741, a difference of opinion on some points of belief led to a separation between Wesley and Whitefield, and since that time the Methodists have been divided into two branches, namely the adherents of Whitefield, or Calvinistic Methodists, by whom the doctrine of predestination is admitted in its most rigorous sense, and the Wesleyans, who are Arminians, and who form by far the most numerous portion of the body. The Methodists are great promoters of Sunday schools, and their zeal and example has contributed much towards reformation of manners wherever they have established themselves. In the field of missionary labour, they enter into honourable rivalry with the Baptists and Moravians. At first they remained in communion with the Church of England, but latterly they have made a complete separation, and are under the general government of an assembly of their clergy, called the *Conference*, in which the whole of their ecclesiastical property, which is of considerable value, is vested. They have made rapid progress in Britain and the United States of North America. They have also establishments in India, particularly at Calcutta, and in Ceylon, and in Polynesia.

The RELIGION OF ISLAM, or MAHOMETANISM, is essentially a pure theism, and its creed is summed up in this simple formula— *There is no god but Allah, and Mohammed is his prophet*. It was founded by Mohammed of Mecca, about the year 611 of the Christian era; and while its adherents acknowledge

* A number of the followers of Huss, in Moravia, who in the year 1457, retired to the Lordship of Lititz, and assumed the appellation of *Brethren of the Law of Christ* (Fratres Legis Christi.) Soon dropping part of this name, they styled themselves simply *The Brethren*; and being afterwards joined by many in Bohemia who were of like disposition, they called themselves *The Unity of the Brethren*, or *United Brethren* (Unitas Fratrum.) Their main rule of conduct, which is still adopted by the modern sect, was to suffer all for conscience sake, and not to use arms in defence of religion, but to seek protection from the violence of enemies, by prayer to God, and by dispassionate remonstrance. — *Kinnesmith, Hist. Rec. of the Moravian Church.*

† Balbi, *Abrégé de Géog.* p. 70.

the divine authority of Judaism and Christianity, they believe that Mohammed was the last and greatest of the prophets, and that his doctrine has accordingly superseded that of his predecessors. *Islam* is the name of the religion itself, and signifies submission to God. Its professors are called Moslem, Moslemaun, Mossolman, or Mussoulmaun, (*i. e.* true believers); but among Europeans they are generally called Mahometans, from the name of their prophet, which is thus variously expressed in Roman characters: Mohammed, Muhammed, Mahomet, Mahmoud, Mechemet, Mehmet. The principal precepts of Islam are,—1st, Purification; 2d, Prayer; 3d, Fasting in the month *Ramazan*, during which every kind of food must be abstained from between sunrise and sunset, an abstinence which is amply compensated by the licence given to the faithful during the succeeding festival of *Bairam*; 4th, Almsgiving, the legal amount of which, as distinguished from casual charity, consists in giving every year to the poor the fourth part of all moveable property; 5th, Pilgrimage to Mecca, which every true Mussulman, in good health, is obliged to undertake at least once in his life. Prayer five times a-day at set hours is enjoined, but the ceremony may be performed at home, or wherever else the individual may happen to be. It is only the solemn prayer on Friday that must be made at the mosque and along with the congregation. Friday is the holy day of the Mahometans, and is called *gemaat* (assembly). On this day all believers must repair to the mosque at the hour of prayer, but during the rest of the day they are at liberty to work, and manage their affairs. They have only two festivals that require absolute rest, one of which is the feast that succeeds the fast of Ramazan. Following the example of Ismael and the ancient Arabs, the Mahometans practise circumcision, and they have also adopted the Mosaic distinction of clean and unclean animals. They believe in good and bad angels, and that while evil spirits pursue men incessantly to draw them into evil, good angels are charged by God to support and guide them in this life of trial. They believe also in the immortality of the soul, or rather, to speak correctly, in a future life, the nature of which, however, is perfectly inconsistent with the metaphysical notion of the soul's immateriality and capability of separate existence. They believe also in a universal judgment, where every one will be rewarded according to his works. Mahometanism forbids the use of wine and intoxicating liquors. It permits believers, however, to marry four wives, and moreover leaves their female slaves at their disposal. In this world they are devoted to the gratification of their animal propensities, and in the world to come they expect to lead a life of voluptuous enjoyment in heaven, amidst cool groves, upon the banks of clear streams, or beside sparkling fountains, in the company of the Houris, who, always young and ever-blooming, will be constantly ministering to the pleasures of the blessed. In other respect Islam leaves its votaries at perfect liberty, and the Mussulmen are persuaded that whatever befals them, good or evil, is predestinated. All their doctrines and precepts are contained in the Koran (*i. e.* the reading or lesson), the different parts of which were, as Mahomet pretended, successively revealed to him by the angel Gabriel, and which contains in one body their religious, civil, and military code of law. It is written in Arabic, which on that account has become the sacred language of the Turks, the Persians, and other Mussulman nations. These nations also agree, in adopting as their common *era* the flight of Mahomet from Mecca, which they call *Hegira*, or *Hejirah* (hedge-rah, *i. e.* the flight.) Their years are lunar, and the first of them commences with the 16th of July A. D. 622.* In the early periods of Mahometanism, those princes who succeeded its founder as the chiefs of his new religion, were called *khalifs* or *vicars* of the Prophet, and also *emir-el-moumanin*, commander of the faithful. But as, in the course of time, several claimants of the khalifat appeared at once, the influence attached to title and office diminished, and there is at present no khalif, properly so called. The Sultan of Constantinople is only invested with temporal authority, and it is the *mufti*, in concert with the *ulemas* or doctors, who judges of questions of doctrine. The King of Persia stands in the same situation; he is not even invested with the full sovereignty (theoretically at least), since he exercises only a temporary authority until the reappearance of the mahdi, to which we shall afterwards advert. The Emperor of Morocco is the only prince who pretends to unite in his own person the spiritual and the temporal characters; he sometimes takes the title of khalif, but his political influence is inconsiderable. The Mussulmans have ministers of religion of different classes. The *khatib* or preacher, ascends the pulpit every Friday in presence of the assembled people, and prays for the sovereign and the nation. The *imam* is the ordinary officiating minister in the mosque; he leads the prayer of the people, who follow his movements; he also presides at circumcisions and funerals, and is, in short, the counterpart of the curate or parish priest of Christendom. These ministers are not subject to vows; they are free to marry or to change their profession; and the same individual is by turns a priest, a soldier, a lawyer, &c. The learned in the Koran are styled *mollahs*, and correspond in status with our doctors in divinity; although in some Mahometan countries the title seems to be applied indiscriminately to all ministers of religion. Mahometan countries are infested with a species of monks or friars, persons professing to lead pious and retired lives, and who bear the appellations of *fakirs* and *dervishes*, names derived from Arabic words signifying a state of poverty. Of these there are several different orders, the origin of some of which goes back to the times of the first khalifs. Most of these friars are subjected to a severe noviciate, and are admitted only after a long probation. Some of them live in communities in a sort of convents, others lead a solitary though wandering life. All of them, however, are free to change their condition, and choose whatever profession suits them. Those who pique themselves upon a purely contemplative life are called *sofis*, some of whom carry their notions to the most extravagant spirituality, and have consigned their reveries to numerous books. Those, on the contrary, who love the world, often lead a very irregular life, and give themselves up to every excess. It is those persons that are mentioned by travellers under the names of *calenders*, *sawons*, &c.

The adherents of Islamism have always been divided into a great number of sects, and their schisms have sometimes occasioned destructive wars. In order to give an idea of the little union that prevails among Mahometans, it may be sufficient to repeat a statement made by some Mussulman doctors, that the Magian religion is divided into 70 sects, Judaism into 71, Christianity into 72, and Islam into 73, only one of the latter of which can lead to salvation. These divisions began immediately after the death of Mahomet, who left no son, and having neglected to nominate his son-in-law Ali to be his successor as the head of the new religion, his companions in arms successively elected Abubekr, Omar, and Osman to the khalifate. These proceedings were immediately protested against by some of the other adherents of the Prophet, who refused to acknowledge any but Ali for their lawful sovereign. Afterwards, when Ali was raised to the khalifat, several of the opposite party in turn revolted from his authority, and commenced a bloody civil war. Such was the origin of the two principal sects that still divide the Mahometan world; namely, the *Sonnites* and the *Shiahs*. Besides these there are two modern sects, called the *Yezedees* and the *Wahabees*, which, on account of the place which they occupy in the recent history of the East, must not remain unnoticed.

1. The *Sonnites*, or *Soonees*, admit the legitimacy of the regular succession of the khalifs Abubekr, Omar, Othman, Ali, &c. and regard as equally holy all the companions of the Prophet who were faithful to the precepts of Islam; while the *Shiahs*, on the contrary, recognise only Ali and his descendants as the lawful heads of the religion, and anathematize Abubekr, Omar, and Othman, and all who did not take part with their favourite khalif. The two sects regard each other as little better than infidels,

* A table, showing the correspondence of the years of the Christian and Mussulman eras, will be found in the first volume of the History of Spain, in Lardner's Cabinet Cyclopædia.

and hold no communion. This division, which was at first only political, soon began to have an influence in religious matters. Islam being developed by time only, recourse was necessarily had to the decisions of the companions of the Prophet respecting matters not explicitly stated in the Koran. The three first khalifs naturally exercised a great influence, and the Soonees admit indifferently the theologic explications and legal decisions of these personages; on this account they are called Soonites, from the Arabic word *sonna* (tradition). The Sonnite faith at present prevails among the Mahometans of the Ottoman empire, Arabia, Egypt and other parts of Arabia, in Turkestan, India, and the eastern islands, and also among the Turkish tribes within the Russian empire and Persia. They are subdivided into four sects, called *Hanbalites*, *Shafeites*, *Malekites*, and *Hanefites*, from the names of their respective founders, Hanbal, Shafei, Malek, and Abu-Hanefa. But, as they differ only in unimportant matters, they are all considered to be equally orthodox, and have their several places of worship within the Beitullah (House of God) at Mecca. The doctrine of Abu-Hanefa is generally followed in Turkey, that of Shafei in Egypt, that of Malek in Barbary, and that of Hanbal in Arabia.

2. The *Sheahs*, rejecting as heretical the traditional commentaries admitted by the Sonnites, adopt different principles, and are on this account named by their adversaries Sheahs, from an Arabic word signifying sectaries. They call themselves *Adelies*, or partizans of justice. As in the case of the Sonnite sect, there are likewise differences of opinion on some important points among the Sheahs. Most of them agree in recognising Hassan and Hossein, the sons of Ali, as lawful sovereigns; and they regard in the same light the direct descendants of Hossein to the last individual of the race, who, having disappeared at the age of twelve years, is believed to be concealed in some remote place, from which he will reappear among men, and make the right cause triumphant. These descendants of Hossein are named the *twelve imams*, the last of them is also named *mahdi*, or the directed. During the period of his disappearance there is no lawful authority upon earth, and kings are to be considered his lieutenants only. It was in consequence of this belief that the Persian kings of the Sofi dynasty, who pretended to be descended collaterally from the imams, called themselves the slaves of the king of the country, and kept several horses ready saddled for the use of the imam when he should reappear. This singular doctrine still prevails in Persia. At the outset, however, there were many Sheahs who did not admit this succession of the imams, but believed that to Ali alone, after Mahomet, belonged the temporal and spiritual authority, and that if he yielded for a time to the perversity of the age, he would not delay to come again upon earth with majesty, and punish the perpetrators of the crimes that so long had stained human nature. Many of these sectaries even believe that Ali has been invested with a divine character, and they do not scruple to adore him as a god. Such is the case with the *Nessares* and *Mutwalees*, who dwell among the hills and valleys of Lebanon. Other Sheahs acknowledge the first six imams, but say that there was an error respecting the seventh, and that, in place of Mousa, one of his brothers, called Ismael, should have been chosen. Hence they were named *Ismaelians*. They believe that after Ismael the character of *mahdi* passed to unknown personages; and they successively attributed the character to the Fatimite khalifs of the race of Ismael, who, during the tenth, eleventh, and twelfth centuries, ruled over Egypt, Syria, and parts of Africa. The Ismaelians established in Persia, not far from Casbin, belonged to this sect, and likewise those inhabitants of Lebanon who became so famous in the middle ages by the name of *Assassins*. These two branches still subsist, but not with the same power and resources. To the same sect may be referred the *Druzes*, whose origin goes back at least to the eleventh century, in the reign of the Fatimite khalif Hakem. They differ from the other Ismaelians, in believing that Hakem was the last incarnation of Deity, and, expecting his return into the world, they worship him under the figure of a calf! The doctrines, however, of the various sects of Sheahs have changed from time to time, and it would be a tedious and useless labour to describe them all.

3. The *Yezedees* dwell in the mountains near Sinjar in Mesopotamia, and appear to be the remains of the Magians, Manicheans, and Sabeans, who long troubled the East. They became afterwards blended with the members of the Christian and Mussulman communions, so that it is now difficult to discover their true origin and character. They admit a good and an evil principle; and as they believe the evil one alone is to be feared, it is its representative only that they seek to propitiate. They name him *al-sheikh almoazzem*, or the great sheikh. They would rather be put to death than curse him; moreover they worship the sun at his rising. They hold Christian priests in great veneration.

4. The *Wahabees* originated about the middle of last century, from the preaching of Abd-ul-Wahab. Their doctrine is Islam reduced to its greatest simplicity. According to their opinion, the Koran contains a doctrine truly divine, but they hold that as Mahomet was only an ordinary man, his name ought to have no place in formulas of religious worship, and that every honour paid to him or any of his disciples is to be considered an act of idolatry deserving of punishment. They worship God alone, are scrupulous of invoking any mortal being; and when they meet with chapels or mausoleums raised in honour of imams or saints (structures which are very numerous in Moslem countries), they pull them down. They avowed their intention of expelling the Turks and all other foreigners from Arabia, and had nearly succeeded in getting possession of the whole country; but after a fierce warfare were at last reduced by the present Pasha of Egypt, and their chief Abdallah carried prisoner to Constantinople, where he was put to death.

BRAHMINISM recognises a supreme being, called *Para-brahma*, for its chief god; but its votaries are taught that he delegates his powers to Brama, Vishnu, Siva, and a multitude (333,000,000) of subaltern divinities, who are thus set over the government of the world. Brahma presides over the earth, Vishnu over the water, and Siva over fire. These three persons form one godhead, and are called the *Trimourti*, or Hindoo Trinity. The Hindoos have several sacred books, named *Vedas*, which are written in Sanscrit, and form their code of religion and philosophy. They believe in the metempsychosis, or transmigration of souls, and, in accordance with this belief, some castes abstain from the use of animal food. Although Brahmanism is debasing in its general tendency, yet it inculcates the duty of moderating the passions, teaches the doctrine of the immortality of the soul, and its purification by penance and voluntary abstinence, and enjoins many things of a practically religious nature. At one time all its professors appear to have been divided into four great *castes* or classes, namely, the *Brahmins* or priests, the *Kshetrys* or soldiers, the *Vaisya*, or merchants and agriculturists, and the *Sudras* or artizans, labourers; but even in the time of their legislator Menu (perhaps 3000 years ago), these classes had become mixed. The military caste has long since totally disappeared from history; and of the remaining three the Brahmins alone have any pretensions to a pure descent from their original priestly stock; but as they can produce no written records of their descent, even their pretensions are not universally admitted. The Brahminical worship is embodied in a great number of solemn ceremonies and customs, some of them of a most horrible description, such as the procession of Juggernath, in which a heavy car, bearing the idol, has crushed innumerable fanatics, who threw themselves before the wheels, expecting to find at once a glorious death and everlasting happiness. Need we add those remains of the practice of human sacrifices exemplified in the custom of self-immolation, once so prevalent among widows belonging to the two higher castes of Hindoos; or those most extraordinary sacrifices of their own lives, which the Brahmins have been known to make in times of epidemics or other public calamity. There are besides other festivals, where tumult, licentiousness, and indecency prevail, and where immodest symbols are presented to the prostrate multitude. Ablutions and prostrations form an important part of their religious rites; and even the images of their gods are solemnly bathed in the sacred rivers and tanks. Seve-

ral rivers, such as the Ganges, the Nerbuddah, and the Krishna, are reputed sacred. The Hindoos make numerous long and fatiguing pilgrimages. They are, in short, most rigid observers of all the external forms of religion, but are utter strangers to the charity, and purity of life and conversation, that alone make religion valuable. Indeed, of all systems of religion, so called, there is hardly one that exceeds Brahminism in demoralizing its votaries.

The Hindoos, in their chronology, make use of several eras, of which we shall state the names and commencing dates:—The *Caliyug*, the most ancient of India, began 3101 before Christ; the *Era of Salivahana*, 77 years after the Christian era; the *Era of Vicramaditya* 57 years before Christ; and the *Era of Parasurama*, 1176 years before Christ. The first of these is the most generally known; the use of the second prevails in the southern and western provinces, that of Vicramaditya in the north, and the Parasurama era in Malayala in the south of India.*

BHUDDISM appears to have originated in India about 800 or 1000 years before Christ. It rejects the division of castes; and its principal doctrines, which have transformed the savage nomades of Asia into civilized people, and have made their mild influence felt even as far as Siberia, are the same wherever the worship is followed. The Bhuddist hierarchy alone varies in different countries; but this difference is not enough to induce us to consider Bhuddism in any other light than as a single religion without any real divisions. The Bhuddists, like the Brahmins, believe in a perpetual series of creations and destructions of the world. They do not admit the existence of the Supreme Being, but substitute in his place a luminous space which contains in itself the germs of future beings; and also allege, that even this luminous space is not the highest in the world; and that higher still there is a third region, eternal and indestructible, the residence of the primitive cause of the destruction of all perishable things. Existence is regarded by the Bhuddists as a real evil, everything that exists being unreal, and only the product of an illusion that deceives the senses. While all the intellectual parts dispersed in matter, from the highest region of light even unto hell, are freeing themselves from what they have contracted of a material nature, purifying themselves, making themselves perfect, and finishing by union, the indestructible universal spirit who is to preserve all things during an incalculable period, remains in repose until the laws of *damata*, or destiny, require a new creative power, from the operation of which nevertheless are to be exempted those beings who, totally divesting themselves of matter, have become *Bhuddas*, and remain plunged in *nirvana*, or eternal nothingness—a state opposite to that of existence in matter. The Bhuddas dwell in the indestructible region beyond the luminous space; and for the purpose of preserving the remembrance of the true doctrine, and of rendering mankind capable of following it, these blessed beings descend from time to time upon the earth clothe themselves with bodies, and manifest themselves to men. Those of the highest rank, namely, the *Bhuddas*, properly so called, appear but once; the others, named *Boddhisatta*, appear at different times in successive incarnations, until they reach the rank of the former, after which they appear no more in the world. These perfect beings exercise an absolute empire over their enemy matter, in all its seductive forms. As the masters of *maya*, or the illusion that beguiles the senses by its changes of forms, they can destroy it at will, or make use of it to work out the salvation of mankind. It is in this manner that all the incarnations of the Bhuddas have been effected; their souls descend in the form of luminous rays, and take a body under the envelope of Maya. They do nothing without a special design; their operations are never violent; they never restrain the free will of inferior beings who are subject to matter, and for whose safety they have come from above. Up to the present age of the world, four Bhuddas have appeared; the last of whom was *Shakyamouni* or *Gautama*; a fifth is to come before the next destruction of the world, the *Bhudda-Maitri*, or *Maitari*. The Ceylonese and Transgangetic nations announce him for the year 4457 of the Christian era, an epoch that will finish the period of 5000 years which are to follow the death of Shakyamouni, according to the Singalese books. There exist very marked differences of belief relative to the person of the last Bhudda, among the different sectaries of this widely spread religion.

The Bhuddists regard the universe as inhabited by different classes of beings, namely, *shama*, or reproductions by birth; *roupa*, material, or visible gods; or, *aroupa*, immaterial, or invisible. These beings mount by progressive transmigrations from a lower to a higher degree of existence, according to their good or bad conduct in their preceding state, until at last they attain the blessed state of *nirvana*, that is to say, of an existence purified of everything material, and, consequently, insusceptible of the impressions of *maya*, or illusion. In the same way as all these beings are continually quitting one kind of existence for another, so do the worlds wherein they dwell experience changes. Gautama himself knows neither the beginning nor the end of this uninterrupted chain of mundane systems. All beings that dwell in *loka*, or the universe, produced by a succession of destructions and reproductions, are classified in the following manner: Men, and local gods called *nath*, who overlook and judge men, and who have for their servants good and evil genii. This first class has its residence upon the earth, and in the regions of the air that comprise *Mount Mienmo*, and the six heavens of the *Deoas*, placed one above another, and increasing in the same order in brightness and splendour. The second class is that of *roupa*, or the visible gods, who occupy the sixteen higher heavens, as far as the twenty-third heaven of Brahma-loka. In the third class are found the immaterial beings, who, having been zealous followers of the doctrine of Bhudda, occupy the four highest heavens, from the twenty-second to the twenty-sixth. Lastly, the Bhuddas dwell in the *good*, or the empire that encompasses all the heavens.

Gandjour is the name of the Thibetan collection of the principal classical books of the ancient Bhuddists of India, in which are comprised even grammatical and lexicographical works. It is composed of 108 volumes, and the Mongols and the Thibetans have built temples solely to contain these holy books. Some of the forms of worship practised by the votaries of Bhuddism are apparently of a most puerile description. In order to make prayers addressed to the divinity effectual, many of the Bhuddists deem it sufficient that they be put in motion by any means whatever (by the lips of man, or by a mechanical agent), and accordingly there is to be seen in their temples a great number of cylinders constantly turning, being moved by a water-wheel. On these cylinders are placed the holy books, whose contents thus agitated, are thought to have a happy influence upon the welfare of mankind. In their great solemnities they light up a stand of 108 lamps, representing the 108 volumes of the Gandjour, and which are wheeled round in the same way as the cylinders. The chaplets of the Bhuddist priests are likewise composed of 108 grains.

Bhuddism, though it originated in India, is not now generally received there. The few followers it still retains are called *Bhauddas;* for the creed of the *Jainas* of the Dekkan is a modified Bhuddism. The other Hindoos regard Bhudda only as an incarnation of Vishnu. This religion still subsists in all its purity in Nepaul and Thibet. It also flourishes in Ceylon, from which country it was transmitted to India-beyond-the-Ganges. It is professed in the empires of Birmah and An-nam, and in China (where it is called the *Religion of Fo*), Corea, and Japan, by most of those who do not belong to the literary class. The *Sawanaan* hierarchy established in Thibet in the 13th century has spread its influence over the Mongol nations and some of the Tongouses; we must, however, beware of taking this hierarchy for a branch or modification of Bhuddism. The person of the Dalai-lama is regarded as an incarnation of a Bhuddist divinity, who has always had a predilection for the countries to the

* *Companion to the Almanac.* London, 1830.

north of India. The present series of the Dalai-lamas began only in the first half of the fifteenth century; they have now a regular hierarchy established in Thibet and Mongolia. Bhuddism, in its institutions and external rites, exhibits a surprising likeness to the Romish Church. Among the Bhuddists we find pontiffs, or popes, patriarchs with the spiritual government of provinces; a council of high-priests, who unite in conclave to choose the pontiffs, and whose insignia even resemble those of the Roman cardinals; convents of monks and nuns, prayers for the dead, auricular confession, the intercession of saints, fasts, kissing of the feet, litanies, processions, and holy water; all of which the Romanists allege have been borrowed from them, but which are as probably derived from the same common source, the ancient Magian religion of Persia.

The RELIGION OF CONFUCIUS is that professed by the literary class in China, of which Confucius was the patriarch and reformer. Its basis is a philosophic pantheism, admitting of being diversely interpreted according to the opinions prevalent at different epochs. It is thought, observes M. Abel-Remusat, that in a remote age the doctrine of the existence of an Almighty God, the rewarder of works, was not excluded from the Confucian system; and different passages in the writings of its author give room to believe that this great truth was admitted by him, but the negligence with which he has inculcated it upon his disciples, the vague meaning of his expressions, and the care he has taken to base his ideas of morality and justice exclusively upon the principle of love of order, and an ill-defined conformity with views of heaven and natural laws, have allowed his followers to deviate so far from true principles, that since the twelfth century of the Christian era, many of them have fallen into true spinozism, and taught, upon the alleged authority of their master, a complex system that partakes of materialism and degenerates into atheism. The worship, purely civil, rendered to heaven, to the genii of the earth, the stars, the hills, and the streams, as well as to the souls of parents, is, in the estimation of the Confucians, a social institution of little importance; or at least, they hold that its meaning may be explained in different ways. This religion has neither images nor priests; every magistrate performs its rites as part of his official duties, and the emperor himself, as the sovereign, is its patriarch, or pontiff. Generally speaking, all the individuals who compose the literary class in China, An-nam, and Japan profess it, but without renouncing the usages of other religions. They are more superstitious than religious; conviction has little to do with their conduct; and custom subjects them to observances and practices which are by themselves turned into ridicule; such as the distinction of lucky and unlucky days, horoscopes, metoposcopy, divination by lots, &c.

The WORSHIP OF SPIRITS, or the MYTHOLOGICAL NATURALISM of Eastern Asia, is considered by its followers to be the primitive religion of the most ancient inhabitants of China. It has spread as far as Japan, Corea, the country of the Tongouses, and Tonquin, where it has taken different forms, and is still professed by all that part of the population which has not embraced Bhuddism nor the principles of Confucius. This religion has many doctrines in common with Bhuddism; only the individual existence of genii and demons, independently of the parts of nature over which they preside, is better defined than in the Bhuddist system; but it has degenerated into polytheism and idolatry through the ignorance of its professors. Its ministers are of both sexes, and devoted to celibacy; they practise magic, astrology, necromancy, and many other ridiculous superstitions. They are named *Tao-sse*, or *doctors of reason*, from their belief in the existence of *Primordial Reason*, by which the world was created. This doctrine, which was taught six centuries before the commencement of our era, by Lao-tseu, one of their masters, seems to correspond to the notions entertained by the Platonists respecting the *Logos*.

The RELIGION OF SINTO is the oldest that prevails in Japan. It bears a great resemblance to mythological naturalism, of which, by some it is considered only a branch. Sintism enjoins the worship of a supreme being; but it also recognises inferior gods, and it prescribes the practice of good actions and abstinence from animal food. Its temples are called *mia*, and each of them contains a mirror, to teach the worshippers, that as the stains of the body are faithfully depicted in this instrument, so the faults of the soul cannot remain hid from the deity. In some temples there is a niche containing the image of the subaltern god to whom the fabric is dedicated. The simplicity of this worship has been considerably deviated from since the introduction of Bhuddism into Japan. It sanctions pilgrimages, devotion to a religious life, and confraternities of different kinds, including monastic institutions. Although Sintism is the most ancient religion of Japan, the *dairis*, or emperors of the country, who are regarded as of divine origin, have long followed the laws of Bhudda.

MAGISM, or the RELIGION OF ZOROASTER, recognises the existence of a supreme being called *Zervan*, or *boundless time*, from whom spring two principles; the one good, called in the ancient Persian tongue *Ehoro-Mezdao*, the *Oromazes* of the Greeks; the other evil, called *Enghreo-Mecniock*, the Greek *Arimanes*. These principles are at present engaged in continual conflict; but at the last Oromazes will gain a complete victory. Zoroaster taught that there were three worlds: an upper world, the dwelling place of primitive light, and productive force; a middle and visible world, in which Oromazes, the king of light, and *Mithra*, the union of the active and passive forces of nature, hold their reign; and a lower world of darkness, the dwelling-place of Arimanes and his mischievous crew the *Dews*. He acknowledged a hierarchy of heavenly beings, sprung from Oromazes; and these the Persians were wont to invoke as beneficent genii. Man, of heavenly origin, was at first of a luminous and pure nature; but, having fallen under the disastrous influence of Arimanes, he lost his prerogatives; but nevertheless, by fighting continually against the evil principle, he will come to have a part in the universal restoration of all things. The greatest part of the Magian worship consists in purifications, ablutions, and ceremonies which tend to bring its votaries nearer to that illumination of which they consider material fire to be the emblem; and on this latter account, these rites and ceremonies are practised, and the different forms of prayer prescribed in the ritual of Zoroaster are recited before the sacred flame burning continually on the magian altars. The doctrines of Zoroaster are contained in the *Zendavesta*, written in the ancient language called Zend. Magism still subsists among the Persians or Guebres in Kerman, Surat, and other parts of Guzerat, and in Bombay. In the first century of the Christian era, a religion, originating in Persia, spread over the Roman empire, under the name of the *Mithraic* religion. It bore a great resemblance to the religion of Zoroaster; but its adherents paid special adoration to the god Mithra, the son of Oromazes, to whom the guidance of the sun and the government of the world were consigned, and who was destined to act as the mediator between his father and mankind.

NANEKISM, or the RELIGION OF THE SIKHS, which originated with one Nanek, a native of the province of Lahore in India, born in 1419, may be considered as a mixture of Brahminism and Islam. Its precepts are those of the purest deism. The Sikhs worship one god, believe in future rewards and punishments, tolerate all religions, believe in a secondary incarnation of the deity, prohibit image-worship, and abstain from eating pork. They admit the authenticity of the Indian Vedas, which, as well as the Koran, they consider to be of divine origin; but they allege that the Hindoo religion has been corrupted by the introduction of polytheism, and that the worship of images has withdrawn the people from that of the true God. Their temples, of course, contain no idols, and their prayers are of the most simple description. Adults are admitted to their communion through a species of baptism or initiatory rite. This religion underwent great reforms during the pontificate of Gouroo-Govind, who died in 1707, and who is considered by the Sikhs as a new prophet, and the founder of their power as a nation. The Sikhs being essentially a warlike people, no distinction of castes is known among them;

they deem it a duty to abstain from the use of tobacco; also to allow their beards and the hair of their heads to grow. A numerous body of religious warriors, called *Akhalies*, have the charge of everything that appertains to their worship. These, generally speaking, are both fanatics and fatalists, and moreover, are the most turbulent and dissolute portion of the Sikh community. The Sikhs are principally resident in the province of Lahore in India, where for nearly a century they formed a republic, or community of tribes, united by the common bond of religion; but latterly, all of them to the west of the Sutlege have fallen under the dominion of one chief, the maharajah Runjeet Singh. The name, or title of *Singh*, or lion, is proudly assumed by the whole people. Their spiritual head, or *gooroo*, resides in a mountain fortress near Umbritser, the capital of the sect, where he receives every mark of attention from the maharajah.

It is difficult to state with any degree of precision the number of followers belonging to each religion actually existing in the world. The following Table exhibits the estimates of the most distinguished statists, all of which may be regarded as nearly contemporaneous, since those of Malte-Brun and Graberg were published not farther back than from 1810 to 1813; M.M. Walckenaer and Eyries', in their new edition of Pinkerton's Geography, in 1827; that of Hassel in the same year; and Balbi's in 1837.

Religions.	MALTE-BRUN.	GRABERG.	PINKERTON.	HASSEL.	BALBI.
Christianity in all its branches, .	228,000,000	236,000,000	235,000,000	252,566,000	260,000,000
Judaism, . . .	5,000,000	5,000,000	5,000,000	3,930,000	4,000,000
Islam, ...	110,000,000	120,000,000	120,000,000	120,105,000	96,000,000
Brahminism, . .	60,000,000	60,000,000	60,000,000	111,353,000	60,000,000
Bhuddism, . . .	150,000,000	150,000,000	180,000,000	315,977,000	170,000,000
All other religions,	100,000,000	115,000,000	100,000,000	134,490,000	147,000,000
Total, . . .	653,000 000	686,000,000	700,000,000	938,421,000	737,000,000

Balbi's estimate in detail is as follows: —

CHRISTIANITY — The Latin or Romish Church, . . .	139,000,000 ?	
The Greek Church, and all its branches, .	62,000,000 ? ?	
The Protestant Churches and Sects, . .	59,000,000 ?	
Total of Christianity, .		260,000,000
JUDAISM, ...		4,000,000 ?
ISLAM, or MAHOMETANISM, ...		96,000,000 ? ?
BRAHMINISM, ...		60,000,000 ? ?
BHUDDISM, ...		170,000,000 ? ?
RELIGION of CONFUCIUS, SINTISM, MYTHOLOGICAL NATURALISM, MANEKISM, and FETISHISM, ...		147,000,000 ? ?
Total of all religions, ...		737,000,000 ? ?

We feel the responsibility of venturing to differ in opinion from so eminent an authority as Balbi; but it appears to us, that in the foregoing statement he has singularly under-rated the numbers of the followers of Brahminism and Bhuddism. Our own estimate is —

Brahminism, ...	120,000,000
Bhuddism, ...	320,000,000
All other religions (as in Balbi's estimate), ...	507,000,000
Total, . .	947,000,000

Our reason for departing so widely from Balbi's estimate of the Brahminists and Bhuddists, is simply this: The population of India is believed, by those best acquainted with the country, to fall very little short of 200,000,000,* of which nine-tenths profess Brahminism. To keep within bounds, we have restricted our estimate to 120,000,000. The absolute population of the whole Chinese empire, which contains the bulk of the Bhuddists, Balbi estimates by his approximative method at 150,000,000. Messrs. Gutzlaff and Morrison give it, upon the authority of an actual census, at 367,000,000; and Mr. Gutzlaff declares himself to be "fully persuaded that the last imperial census is as near the truth as it can be ascertained."† Those parts of the empire he visited are extremely populous. He took the trouble of examining some parts of the census, and numbering the houses of small districts, and invariably found that the population was under-rated. We have therefore made our estimate of the number of Bhuddists correspond with what we believe to be the real amount of the population of the Bhuddist countries.‡ With respect to Islam, we are not disposed

* *Martin's British Colonies*, Vol. I. † *Gutzlaff's Sketch of Chinese History*, Vol. I.

‡ Professor Neuman of Munich, in an article on the nations and literature of the East, published in the *Journal Asiatique*, August 1834, gives the following tabular estimate of the number of the Bhuddists: —

China, ...	200,000,000	Indo-China, ...	25,000,000
Mandchoos and Mongols, . .	5,400,000	Ceylon, ...	600,000
Japan and Loo-Choo, . . .	25,000,000	Nepaul, ...	2,000,000
Thibet and Bontan, ...	6,000,000		
Corea, ...	5,000,000	Total, ...	269,000,000

The difference between Professor Neuman's estimate and our own arises chiefly from his having under-rated the population of China.

to increase the estimate, because from extreme misgovernment, and the immense extent of sandy deserts that occupy so great a part of the Mahometan world, the population of these countries is really very small in proportion to their size. The best estimate, however, upon the subject, is merely conjectural.

§ 4. *Of Mankind in respect to Civil Government and the Customs of Society.*

Languages and religious creeds may be regarded as the moral ties which bind society together, and these often survive the fall of *civil and political societies.* As it is by the latter, however, that the boundaries of those states and empires which it is the province of political geography to describe are determined, we must therefore take a general view of their varied forms.

Families or domestic societies originate in the ties which unite husband and wife, parents and children. Such of them as resided in the same neighbourhood, would, after quarreling for a while, at length discover that their interests would be best promoted by living in harmony together. Certain rules would be established amongst them, not originally considered as laws, but as customs merely. The union of these families did not form a state, but only a civil society. These small societies must soon have perceived that their customs and observances required to be fixed, or vested with the character of laws. Men of superior natural capacity would become the unlettered lawgivers of these hamlets or villages; or, more probably, perhaps, the circumstances under which they were placed would suggest to them the propriety or advantage of enacting rules for their common guidance, without owing much, or it may be any thing, to any particular individual. As soon as the various relations in which men stood to each other were fixed by laws, political society commenced.

Societies were at first without any efficient government, and, consequently, a prey to the evils of anarchy. This taught man that a physical force is indispensably requisite to support the laws, which of themselves have a force purely moral. A *government*, of some sort or other, was in this way established. At first of a rude and simple form, it was gradually brought nearer perfection, as evils were disclosed by experience, and as the sagacity with which man is endowed, profiting by the same experience, devised the means of obviating them. Government has been, in all cases, the offspring of peculiar circumstances, modified partly by intelligence and partly by force. The notion entertained by Locke and some other philosophers, who contend the laws and regulations of civil societies were settled by compact in conventions held for that purpose, is entirely visionary and without even the shadow of a foundation.

By a *nation* is meant the whole body of inhabitants occupying a particular tract of country, and subjected to the same authority; and by a *constitution* is meant the body of laws and customs which determine the form of government of a nation, and define the respective rights and obligations of the governing power and its subjects, whether the latter are all placed on the same footing, or are divided into classes possessing different rights and privileges.

By the *government of a country* is meant the individuals in it vested with *supreme power*, that is, with the power of making laws and providing for their execution; the servants of government comprise the various individuals employed to defend the state against foreign aggression, to maintain security and good order at home, and to expound the laws and carry them into effect. The supreme power may be divided into different branches, such for example as the *legislative power*, subdivisible into the proposing, the deliberating, and the decerning power; and the *executive power*, subdivisible into the administrative, military, judicial, and inspectorial branches. These divisions are partly arbitrary. The manner in which the supreme power is organized, subdivided, and concentrated, constitutes the form of government.

Forms of government admit of innumerable variations. We shall point out those most generally known, beginning with those in which the powers of government are most diffused; proceeding through the intermediate degrees to those in which they are most concentrated. The extremes approach each other more nearly than is commonly imagined.

Pure democracy exists, as the term applies, wherever the supreme power is immediately exercised by the majority of the nation. *Commissorial democracy* exists when the supreme power is exercised by a council chosen by the people, and which is revocable by, and responsible to them. Such functionaries are not the representatives of the nation, but merely its delegates or commissioners. A nation is governed by a *representative democracy*, when the supreme power is exercised by magistrates, chosen

by the people, who represent them, and who, consequently, taken collectively, are sovereign and not responsible. This form is subdivided into a pure democracy, when the people themselves directly choose their representatives, and into a representative electoral democracy, when the people choose electoral bodies, who again elect the representatives.

Elective aristocracy resembles representative democracy. It exists when the people, either directly or mediately, choose their magistrates, not indifferently from among the citizens, but from a certain class determined by law. Elective aristocracy is pure or free, when the people have created the privileged class, or the aristocratic body, when admission into that body is open to all citizens, and when its members are amenable to the supreme power in the hands of the people. *Simple* or *pure aristocracy* exists when the people choose, once for all, as their plenipotentiary representatives, a governing body renewable without their concurrence; or when such governing body has seized or usurped the supreme power. Every form of government compounded of those now named is called an *aristo-democracy*. When the aristocratic party seems predominant, we have a temperate aristocracy, when the democratical, we have a temperate democracy. Rome, after the expulsion of the Tarquins, was an hereditary oligarchical aristocracy, which gradually changed into an aristo-democracy, composed of all the other kinds. The Patricians were the hereditary aristocratic body; the senate an elective free aristocracy; while the assemblies of the people represented the democracy.

A democratic monarchy is a democracy in which the supreme power is partly exercised by an individual and partly by a democratic body. As the supreme power may be variously divided, it is impossible to determine the different kinds of democractical monarchies. It may be hereditary, or enjoyed by a certain family, or elective, a monarch being chosen at each vacancy. The right of election may be vested in the people, in an electoral body, or even in a single elector. These variations are common to other kinds of monarchy. The legislative power may be divided between the representatives or commissioners of the people and the monarch, or it may belong to the former only or to the latter. The judicial and military powers may be dependent upon the monarch, or upon the body of the nation. The democratic body itself may be chosen without, or with the concurrence of the monarch.

An *aristocratical monarchy* is a government in which the supreme power is jointly shared by the monarch and the aristocracy. This latter body may be a free elective aristocracy, as when an assembly of representatives chosen by the people forms the council of the monarch; an elective hereditary aristocracy chosen by the people, or by the monarch, or by both conjointly: or lastly, a pure and perpetual aristocracy, independent alike of the people and the sovereign. Such was the nobility in most European states before the present epoch. An aristo-democratic monarchy is a government composed of a monarch, an aristocratic body, and a democratic body. By a mixed government is generally understood a monarchy of this description. The different combinations of this form are so multiplied, that it is impossible to classify them.

A *pure* or *absolute monarchy* is that in which the supreme power is entirely confided to one individual, or, in which a single individual represents the majority of the nation. Absolute monarchy is said to differ from despotism in this, that the monarch holds his power of the nation, either by expressed or tacit consent, and is supposed to be governed by certain fundamental laws; whereas the despot pretends to hold his power from God and his sword, and to be the uncontrolled master of the lives and properties of his subjects. The dictatorship was a kind of absolute monarchy, elective and temporary, in the Roman republic.

The term *anarchy* means the absence of government. Taking the word government in its true and literal signification, it is evident that anarchy may arise in two ways: 1*st*, From the non-existence of any supreme power in civil society; or, 2*d*, From the preponderance of unconstitutional power, exercised in an arbitrary manner and without the forms of government. Anarchy may be modified in a thousand ways. The following are such of its forms as appear most worthy of definition:—*Ochlocracy*, or *popular anarchy*, takes place when the supreme power is unlawfully usurped by a mob or multitude. Hence, according to this definition, even the majority, where they are not legally vested with sovereign authority, can exercise only anarchical power. *Oligarchy* occurs when a small number of individuals or families exercise the supreme power without being chosen by the body of the people or of the aristocracy. *Demagogy* occurs when one or several individuals, without legal appointment, lead and manage the people at their will, actually exercising the power which they seem to leave

in their hands. The word *tyrant* signified originally chief or monarch. Virgil employs it more than once in this honourable sense, but it was afterwards applied to denote those who, though living in republics, usurp the powers of absolute monarchs. This is the ordinary sense of the term in the Greek and Roman authors. The moderns apply it to those guilty of any violent and cruel abuse of authority.

Despotism has been sometimes confounded with tyranny, and sometimes with absolute monarchy. Despotism is absolute power, not derived from a lawful source, and consequently acknowledging no limits. The despot pretends to be as much master of his country and of his subjects, as a private person of his estate and his cattle. Despotism is not necessarily tyrannical, that is, cruel and violent; nor is it absolutely incompatible with some administrative forms, and with institutions which properly belong to regular States, or even to Republics.

It would be improper to class with these forms of governments, or of anarchy, the singular state termed *theocracy*. "It is," say the theologians, "a government instituted by God himself, the magistrates governing in his name." Such was the constitution of the Jewish people — with them theocracy was united first to democracy, and then to monarchy. The popes, in the dark and middle ages, attempted to establish a theocracy upon a great scale.

We have still to notice the *federal systems*, or unions of several independent States, under a superior authority chosen by themselves, and vested with powers more or less extensive, to maintain mutual order, and to furnish the means of defence against external enemies. We may term a confederation, of which all the constituent members are on an equal footing, a *democracy of States*: Several of these unions exist in America. There have been, however, confederations with a chief or presiding power: the late Germanic empire was of this nature. Confederations have sometimes subjects in common: that of Switzerland held several districts in this manner.

Political geography considers in societies of men, besides the general tie, or the form of government, the *particular ties which bind individuals to society*, and which result from the station assigned to these individuals, or from their division into classes and orders.

In the earlier stages of society the *divisions* of *labour* would be few and imperfect; but the advantage of assigning particular tasks to particular individuals, in the carrying on of some employments, even the rudest and simplest, such as hunting and fishing, is so great and obvious, that the introduction of the practice must have been coeval with the first establishment of societies. As population increased, the advantage of carrying these divisions still further would become more apparent, until, at length, individuals would addict themselves wholly to particular callings; and a system of barter and exchange come to be universally adopted.

Money was introduced to faciliate exchanges; not, however, at once, or by the genius of any individual, but by slow degrees, according as experience served to disclose the inconveniences of previous practices and the means by which they might be obviated.

It is not only necessary to the successful prosecution of employments that they should be divided, but it is further and perhaps more essentially necessary that *capital*, that is, food and clothing, and instruments, should be provided for the support and employment of the individuals engaged in any sort of work that does not yield an almost immediate return. Capital is the result of saving. It is a law of nature that industrious individuals do, generally speaking, produce a greater quantity of useful and desirable products in a given time, than is required for their consumption during the same time; and the providence and forethought with which man is endowed, make most persons accumulate this surplus as a capital, or stock. But all are not placed in equally favourable circumstances for the accumulation of capital; and though their means were equal, all are not equally disposed to avail themselves of them; and hence, the distinctions of *rich* and *poor*, which are as natural to society, and make as much a part of the scheme of providence, as differences of colour, sex, or strength. Hence also the distinction of employer and employed, or of *masters* and *servants*. Those who have succeeded in amassing capital, hire, by its means, the services of those who are in want of it; so that, in this way, all classes are benefited by the progress of accumulation, and by that security of which it is the result.

The *right* and *security of property*, to which allusion has now been made, forms, in fact, the foundation on which all the wealth and institutions of society rest. No savage horde has ever been discovered in which the principle of *meum* and *tuum* was not recognised; and every nation emerging from barbarism has always endeavoured to secure to individuals the full enjoyment and free disposal of the property acquired

by their industry, or bequeathed to them by others. The principles of human nature, and the experience of all ages and nations, concur equally in establishing the important truth, that without the security of property, neither industry nor civilization can continue to exist. The greater the respect paid to property, the more effectually it is protected from the attacks of the needy, the profligate, and the powerful, the more industrious, opulent, and civilized will the nation be.

In a highly civilized society the orders and employments of men are infinitely various; but they may, notwithstanding, be divided into a few great classes, each of which has, however, almost innumerable subdivisions. We have only room to specify the classes of agriculturists, manufacturers, merchants, and public functionaries.

The *agricultural class* comprehends, in its most extensive sense, all those who derive from the earth, water, &c., any productions useful to society, comprising of course, cultivators of the soil, fishermen, vine-dressers, miners, &c. There are tribes composed entirely of one of these classes. Such are the pastoral tribes, or *Nomades*; the fishermen, or *Ichthyophagi*. In civilized states, there exists a class of a peculiar kind, that powerfully contributes to the production of national riches of inestimable value and perpetual duration. It consist of men of science who enlarge the empire of knowledge, and men of letters, who purify the taste, refine the sentiments, or elevate the morals and manners of the age.

The *manufacturing class* consists of those who convert raw into artificial products. When the processes followed by the workmen require unusual genius and taste, they obtain the name of the fine arts. When they chiefly demand corporeal strength and dexterity, they are called the mechanical arts. A manufactory is an establishment where an art is conducted on a large scale. The name *work* seems to denote one of these establishments in which extensive and powerful machinery is employed.

The *commercial class* is composed of the merchants or dealers who buy and sell, either on a great or small scale, the various productions of nature and of art; of correspondents or agents employed by the merchants to faciliate the execution of purchases and sales; of bankers and brokers, who confine their operations to the transacting of pecuniary affairs; and, lastly, of mariners and carriers, who convey commodities from place to place.

We comprise in one class all *public functionaries*, including the sea and land forces. They are vested with a greater or less proportion of the force of the state; and are the agents or instruments of the supreme power.

The numerical proportion in which these classes are met with in a state is one of the most interesting questions of statistics. We decide according to it whether a nation is to be reckoned agricultural or commercial.

Classes have their foundation in the very nature of society itself; but *castes* or *orders* have been created by laws and constitutions. By the word caste is understood an hereditary class, exclusively assigned to one species of occupation. This system of division existed in Persia, Arabia, and Egypt, and it still exists in India. It is accounted for in a satisfactory manner, by referring to the original difference of the primitive tribes, whose union formed the nation. The castes of priests and of warriors in Egypt, were probably two clans somewhat organized and disciplined, who subjected the tribes of husbandmen and shepherds. The conqueror disdained to intermingle with the vanquished; and the laws afterwards sanctioned and perpetuated a system of separation which accident had originally established.

The *political orders* in the states of Europe differ from castes in this, that they have either no occupation exclusively reserved for them, or if, like the clergy, they have any such, it is not hereditary. In the middle ages, when armies consisted of cavalry, the nobility partook largely of the nature of a caste; but the nobles are now merely an order of the state. The citizens, commonalty, or third order, and the peasants, form in some states orders recognized by the constitution. In Sweden, the order of peasants possesses much influence. The same was formerly the case in the Tyrol. There are still, however, some countries, particularly Russia, where the husbandmen, subjected to the yoke of personal slavery, form a real caste, condemned to a state of abject and perpetual degradation.

In despotic states, as in Turkey and in China, there are no orders.

Slavery renders all individuals equal. In Europe, it is the "*esprit de corps*," the corporation or professional spirit of the different orders, and the equilibrium resulting from their various prerogatives and interests, contending with each other and with the supreme power, which secures political liberty. On this account, therefore, in describing Europe we shall have to explain the orders of knighthood, honorary distinctions, and other institutions, whose object either is to mark degrees in the scale of society, or to render the distance between them less felt and less perceptible.

The enumeration of the various *denominations by which different states are designated*, would be uninteresting. The application of the terms empire, kingdom, sultanat, khanat, and others, will be learnt in the descriptive part of this work. It would be equally useless to consider in this place the titles which the heads of states assume, from the unostentatious President of the United States, to the Emperor of China, who is called the son of heaven, or the Persian monarchs, who style themselves kings of kings, princes of the stars, and brothers of the sun and moon. It is needless to say that such bombastical epithets have no influence over the prosperity or power of states. Political geography hardly deigns to notice the arms and colours by which different states mark their ensigns, flags, and frontier posts.

It is a matter of much greater importance to ascertain the material *resources of the state*. This is the particular object of an extensive science, termed political arithmetic; its results must, however, have a place in the descriptions of political geography.

The first element is the *value of land*, and its produce. Here the different productions of the three kingdoms of nature are to be classed according to their utility, and their value as articles of merchandise. The government itself knows, only by approximation, the value of what agriculture, the fisheries, and the mines produce, and what is the exact proportion between the commodities which the nation sells, and those which it buys. Governments, however, do not often publish even the imperfect information of this kind which they possess, and therefore political geography cannot absolutely warrant the accuracy of the lists of productions, of exports, and imports, which it is obliged to collect with so much trouble. To render these details as useful as possible, it is necessary to know the proportional values in which lists of this kind are made up; the monies, weights, and measures of each country. This subject, which presents a different aspect in every state, will come to be considered in our particular descriptions.

In the second rank, amongst the elements of the national resources, should be placed *commercial* and *manufacturing industry*. It was this which accumulated on the rock of Tyre, on the barren coasts of Attica, and on the flat sandy shores of Alexandria, the treasures of the ancient world; and which, in modern times, raised Venice and Holland to greatness. The political geographer should consider the nature and situation of the coasts of a country, the number and capacity of its ports, and the state of its roads and canals and railways; circumstances, each of which directly influences the progress and prosperity of national industry. It is likewise necessary to attend to the various commercial institutions, such as the great national banks, which facilitate all sorts of commercial operations, and the trading associations, amongst which there are some that possess in sovereignty vast provinces beyond the boundaries of Europe.

The *population of a state* forms the third element in estimating its resources. The proportions between the deaths, the births, and the number of living inhabitants in a country, enable us to approximate pretty nearly to its total population; but it is only by a census that it is ascertained exactly. And even when we have an authentic census, we must examine into the mode in which it has been taken before trusting to it implicitly. The same individuals are sometimes counted twice, which happens every time that the inhabitants of the country are numbered in summer, and those of the towns in winter. A census ought, if possible, always to be taken all over the country on the same day.

The number of inhabitants is an important element in every good system of finance: the more individuals a country contains, provided they have the means of subsistence, the greater progress will commerce and manufactures make; and, consequently, the greater will be the increase of revenue. The number of inhabitants ought equally to determine the number of troops. It is computed that the men capable of bearing arms, form about a fourth part of the whole inhabitants. The greatest effort, however, that the most warlike state can make in a case of extreme necessity, is to arm about an eight part of its population. No example even of this has occured in modern history.

Let us observe also that the more a mass is concentrated, provided it has space sufficient to move in, the more energy it will acquire. A small populous country, therefore, is, in proportion, more powerful than a state of vast extent thinly peopled. A country is looked upon as populous, when it contains about 100 inhabitants to the English square mile. England in 1830 was peopled at the rate of 258 to the square mile: Ireland at the rate of 256, and Scotland at the rate of 78. Wales has 108 to the square mile. Holland had, before the troubles of 1788, and the revolution which followed them, 212 inhabitants for each square mile, which makes 1908 for each square English league. The island of Malta is probably the most thickly peo-

pled country, having nearly 800 souls to the square mile. But these are to be regarded only as rare local exceptions; and it is common enough to find, in European Russia, governments which have not more than 30, or even 20 inhabitants to each square mile.

The attempts which political arithmeticians have made to compute the value of the aggregate *revenue of a whole nation*, arising from the employment of its capital in the cultivation of the soil, and in the various branches of commerce and the arts, have hitherto produced only proximate results, more or less accurate according to the correctness of the data from which the calculations have been made. Political geography exhibits merely the revenues at the disposal of government, and the principal sources whence they flow. In many countries this information is furnished by the *annual budget*, or tabular view of the income and expenditure laid before the aristocratic or democratic body, sharing in the supreme power. As the budget, however, is sometimes intended to neutralize the unfavourable impression which may have been made by the increase of the *public debt*, it occasionally exhibits fallacious details: In absolute monarchies this device is superfluous; — but there the correct estimates often remain buried in the ministerial *bureaux*, until some lucky chance, or the will of an enlightened sovereign, gives them a useful publicity. As it is only in Europe and America that there exists a regular system of finance, so it is in the descriptions of those parts of the world that we shall point out the different species of taxes and duties, and the various ingenious artifices by which civilized governments contrive to extract money from the pockets of their subjects, while the chiefs of barbarous nations carry off, *in kind*, and most frequently in an arbitrary and irregular manner, the articles which they require.

An *armed naval and military force* is unfortunately, but necessarily, an object of the first importance to every government.

Savage tribes, and even some half-civilized nations, are accustomed to march against their enemies all the males fit to carry arms. Nothing prevents them from doing so, as fishing and hunting are occupations which they may carry on when under arms. Under other circumstances, the women may be sufficient for the employments of agriculture and the tending of cattle; but as soon as labour is multiplied, and, in consequence of this, comes to be divided, that is, as soon as the agricultural, manufacturing, and commercial classes, have each a separate existence and place in society, it is impossible to arm and to bring into the field the entire mass of a nation, without completely suspending the exercise of those trades and occupations on which its subsistence depends. It therefore becomes necessary to form a class exclusively devoted to the trade of war; such was, in the middle ages, the design of the orders of nobles and of knights; but the invention of gunpowder and artillery, the introduction of a new system of fortification, and the perfection to which tactics have been brought, have converted the formerly simple and almost mechanical art of war into a profound and extensive science, to the study of which many years must be devoted. This consideration, strengthened by motives of ambition and policy, gradually paved the way for the establishment of standing armies. The European powers have had, for more than a century and a half, a certain number of troops in a state of perfect discipline and equipment, ready to march at a moment's notice. A third, and often a half of the public revenue, is consumed in supporting these troops. The *land force*, or *army*, is composed of four principal parts, or arms, with their subdivisions; namely, the infantry, or combatants on foot; the cavalry, or combatants on horse-back; the artillery, whose province is to work those destructive engines on the skilful management of which the issue of battle frequently depends; and the engineer department, which conducts the defence and attack of fortified places. In the description of a kingdom, not only should we point out the number and situation of its fortresses, the passes and defiles of greatest importance, as well as the number of troops which it maintains; but it is farther necessary to mention, whether these are regular troops, or bands without discipline or military science, and also to specify the physical advantages and disadvantages of the frontiers.

In like manner, it is not enough to know the number of ships of which the *navy* of a state consists. We must also ascertain whether it possesses an adequate number of skilful officers and experienced sailors. We must observe whether it comprehends in its dominions extensive coasts, furnished with safe and commodious harbours, or touches the sea only in some insulated points. According to circumstances, a state may require a fleet of ships of the line, and frigates, to fight on the open sea, or a flotilla of gun-boats to defend its coasts, its straits, and its ports.

Finally, states have also, besides their own peculiar forces, *a force of situation depending upon their external relations:* and particularly, on the alliances, whether diplomatic or natural, which render them the friends or enemies of each other. The equilibrium resulting from the alliances of the different European nations, is called the "*balance of power.*" This equilibrium has frequently been subverted; but in the study of political science it is nevertheless of importance to examine the principal basis on which it rests.

The *moral state of a nation* is the result of the various political and social relations we have been specifying. This state is indicated by various signs, of which the political geographer ought to notice the most striking.

The *mode of dress* is more than a simple object of curiosity; the loose flowing habit of the orientals, and the tight clothing of the European, exert an influence on their physical and moral constitution. The nudity of certain nations procures to them corporeal advantages, an agility, a strength, and a robustness of health, unknown to nations whose limbs are encumbered with garments; but this superiority is more than counterbalanced by extreme indolence and feebleness and torpor of understanding. The custom of painting the body, whether by imprinting or marking figures upon the skin, or by simply besmearing it with a coat of colouring, marks the infancy of civilization, and the first working of vanity. Rank and dignity are frequently indicated by the vestments, or by the ornaments with which they are embellished. A sash of cotton cloth of a particular kind, is the distinguishing badge of royalty in Otaheite. The priests of Siam reserve to themselves the privilege of shaving their eyebrows. Among the negro nobility, a necklace of human teeth supplies the place of the star which decorates the corresponding order in Europe.

The ordinary *habitations* of a people, are an almost infallible index of the degree of civilization at which they have arrived. The human race may be divided into four classes, according to the four kinds of habitations which follow: — 1*st*, Caverns in the rocks, and under ground. They who make these their common abodes, are called Troglodytes. 2*d*, Huts of earth, branches of trees, stones, or some other substance, either in the natural state, or coarsely wrought. 3*d*, Tents; these moveable dwellings, in the opinion of wandering pastoral tribes, appear preferable to our palaces. 4*th*, Houses, which may be defined huts brought to a state of perfection; for even the most superb colonnade is merely a noble imitation of the coarse beams which supported the thatched roof. We find in Europe, houses constructed of unsquared beams, of beams that are squared and lined with wainscoting, of prepared clay and squared timber, of bricks and wood, of bricks alone, of unhewn stone, of hewn stone, and of polished marble.

The name of a *city* or *town*, strictly speaking, is not given to a collection of houses on account either of its extent or its population, but in consequence of certain privileges which the place enjoys. The right of exercising the various arts and trades, and of conducting commerce, serves in most countries chiefly to distinguish cities and towns from *villages*. The latter are sometimes larger than towns, for example in Silesia; but they have commonly no privilege to distinguish them from hamlets and other assemblages of houses in the country. *Burghs* are places which enjoy a portion of the rights granted to cities. In other respects, these words admit of different senses, according to the peculiar laws and customs of different countries.

Utensils and *instruments* are objects no less worthy of the attention of a philosophical observer. The bows, the javelins, and the nets of savages, often deserve to be admired for the perseverance and dexterity manifested in their production.

The European is accustomed to make almost every nutritive substance minister to his support, or to the gratification of his palate. But there are nations that live almost exclusively upon one kind of *food*. The frugivorous, carnivorous, and ichthyophagous tribes are distributed over the whole surface of the globe. The taste for horse-flesh appears peculiar to the Mongols, Tartars, Finns, and other descendants of the Scythians, and to the Sclavonic and Gothic nations. Both ancient and modern writers place the Acridophagi, or eaters of locusts, in Africa. Some of the American tribes visited by Humboldt, devour a species of clay. Respecting Anthropophagism, or the horrible custom of eating human flesh, it appears to be proved that it does not belong exclusively to any nation; all savage tribes are addicted to it, either from the impulse of a ferocious hatred of their enemies, or by the dictates of an atrocious superstition, or finally, in consequence of extreme want. Not only do modern accounts assert that the practice obtains in the greater part of the nations of Africa, America, and Australia; but we discover from several passages in the ancients, that it was at one time prevalent in Europe. The poets ascribe it to the Cyclops and

Lestrygons, whom they place in Sicily. Historians bring this charge against the Scythians, the Cimbrians, a tribe of Caledonians, and other nations of the north. Human sacrifices were known amongst the Greeks and Romans, as well as the Celts, Scandinavians, and Oriental nations. These horrid sacrifices appear to have been often succeeded by a repast still more horrid. The disgusting practice of burying the dead bodies of their relations in their own bowels, was formerly attributed to the Issidones, and the Massagetæ; to several tribes of India; and to the people of Thibet and the Marian Islands.

The desire of procuring a momentary elevation of spirits has caused the invention, amongst all nations, of *intoxicating liquors*. Their different properties, from the generous wine of Europe to the loathsome kava of Otaheite, deserve to be pointed out in the geographical descriptions of the respective countries.

From the immense variety of *customs*, which impart to social life, in every nation, its peculiar features, political geographers select the most striking, namely those which are most closely connected with morals, and which serve to illustrate the history and filiation of the species. Such is the circumcision practised amongst the African nations which do not profess Islamism; the custom of embalming dead bodies, common alike to the Guanches of the Canary islands, and to the ancient Egyptians; the fashion of letting the bodies of the dead dry and wither away in the air, common to the Otaheitans and the ancient Medes; the custom prevalent among the females of India, and the wives of the Wendes and Scandinavians, of immolating themselves upon the tombs of their husbands; and in general the ceremonies observed at marriages, births, and funerals, present resemblances that are often highly interesting.

Civil laws sometimes present singularities which deserve to be marked in the description of a nation. But it is sufficient to notice regulations which punctiliously prescribe silly ceremonies of a degrading etiquette; punishments revolting to humanity; graduated scales of murders, and mutilations, and tortures; superstitious ordeals, still prevalent amongst different nations, and a thousand other similar observances of ancient barbarism, or derived from a more recent despotism.

The *intellectual state of society* closes this lengthened view of the various aspects under which nations may be contemplated. Do they possess an accumulated store of the discoveries of genius, and of the observations of wisdom? Do they cherish, in the sublime and beautiful effusions of poetry, the expression of the noblest sentiments of humanity and patriotism? Do men of science and literature occupy the honourable rank to which they are entitled? These are questions which require to be satisfactorily solved before we can determine the progress which a nation has made in civilization and in morals.

The general result, the collected effect of all these aspects and relations, to which our attention has been drawn, constitutes the character of a nation. Nations may be distributed into three general classes. *Savages* are those, who are ignorant of the art of writing, or of fixing their thoughts by means of conventional signs equivalent to writing. Their vague and unsteady ideas are attached only to objects which strike their senses; they delight to adorn their persons in a manner which we deem ridiculous; they are passionately fond of bodily exercise, and in this respect they infinitely surpass us. Their industry is generally confined to a little gardening, fishing, and the chase. Some of them, however, produce specimens of beautiful workmanship, and have even commodious and elegant habitations. The class of *barbarians* or *men half civilized*, comprehends every nation which, by writing, by written laws, by a religion expressed in ceremonial observances, or by a more regular military system, has evidently emerged from the savage state. But the information which such a people possesses is as yet only an indigested mass of incoherent observations: their arts are exercised as it were by routine—their policy is limited to the defence of their frontier, at the moment of danger, or to offensive operations conducted without a plan. Their progress is, in general, slow and uncertain, because, even in advancing towards civilization, they have no proper conception of the great objects at which they should aim. A civilized nation is that which has arranged its knowledge in the form of sciences; which has elevated the mechanical to the rank of the fine arts; which, to express the various sentiments of the human heart, has created a literature of the highest order; which is possessed of a fixed system of legislation, of policy, and of war, calculated not only for existing circumstances, but for ages to come; a nation which recognises the great principles of public law, by acting in time of peace as the friend of every other state, and by respecting in time of war the property of defenceless citizens; a nation, finally, in which Christianity, undefiled by superstition or en-

thusiasm, displays its appropriate influence in the purification and elevation of the public morals.

We now proceed to give the details of Descriptive Geography, which will constitute the sixth and largest division of our work.

DESCRIPTIVE GEOGRAPHY.

EUROPE.

GENERAL DESCRIPTION.

PHYSICAL GEOGRAPHY.

ASTRONOMICAL POSITION. — *Longitude* (of the Continent) — between 9° *west*, and 68° *east*: *Northern Latitude* (of the Continent) — between 34° and 71°. If the islands, geographically its dependencies, such as Nova Zembla, Spitzbergen, &c. be included, Europe will then be comprehended between 10° *west longitude*, and 70° *east*, and extend to 81° *north latitude*.

DIMENSIONS. — *Greatest length*: — From Cape St. Vincent in Portugal, to a point in the chain of the Ourals, in the neighbourhood of Iekaterinbourg, in the government of Perm, in Russia, 3372 miles.* *Greatest breadth*: — From Hammerfest in Finmark, in Sweden, to the central chain of the Caucasus, near Mount Kazbec or Mquinwari, 2100 miles. The absolute greatest breadth of Europe is 2400 miles, measured from Cape Nord-Kyn in Finmark, to Cape Matapan in the Morea. The narrowest portion of the European Continent, washed by opposite seas, is situate between the Gulf of Kandalaskai, a branch of the White Sea, on the east, and the Gulf of Bothnia, near Kemi, on the west. The next most remarkable contraction of the Continent is between the Bay of Biscay on the west, and the Gulf of Lyons on the east. The width of the former of these contractions is 200 miles; that of the latter, 230 miles.

BOUNDARIES. — *Northern*: — The Arctic Frozen Ocean. *Eastern*:†— The river Kara Balgarama; the main chain of the Ourals; the river Oural; the coast of the Caspian, from the mouth of the Oural to the eastern extremity of the Caucasian chain; the Strait of Ienikale; the Sea of Marmora; the Dardanelles, and the Archipelago. *Southern*: — The principal chain of the Caucasus; the Black Sea; the Mediterranean and its different branches; the Strait of Gibraltar; and the Atlantic ocean. *Western*: — The Atlantic Ocean, as far as the polar circle; and beyond that circle, the Arctic Frozen Ocean, or Icy Sea.

SEAS AND GULFS. — The ATLANTIC OCEAN, which forms the western boundary of Europe, is named by some geographers the WESTERN OCEAN. It receives, besides, several other appellations, for the most part borrowed from the names of the countries of which it washes the coasts.

That portion of the Atlantic situate between Norway to the south of Cape Stadt (Stadtland), Jutland, Germany, Netherlands, France, Great Britain, and the

* English statute miles, 69.167 to a degree of the equator. The same denomination will be preserved throughout this work, unless otherwise stated.

† How to determine the *eastern* and *south-eastern boundaries* of Europe, has occasioned (at least until lately) much division of opinion among geographers. At the beginning of the present century, Malte-Brun perceived the importance and advantage of adopting the natural boundary line traced by the river Oural and the Caspian. For the prolongation of this line westward, he proposed, in his *Précis*, to follow the inferior level of the Caucasian isthmus, as indicated by the courses of the Kouma and Manytch rivers; but he afterwards, in a work which he did not live to complete (the *Abrégé de Géographie*) selected a natural frontier more important and easier to be determined, namely, the ridge-line of the chain of Mount Caucasus.

We may also here remark, in reference to *island dependencies*, that we shall throughout this work be guided by the principle laid down both by Malte-Brun and M. Balbi, that relative proximity ought to determine to what continent an island group or an island belongs. Thus we shall include the Azores among the European islands, and Iceland among those of America, although it has hitherto been customary to annex the former to Africa, and the latter to Europe.

Shetland Isles, is called the North Sea, or German Ocean. It forms a species of Mediterranean, exhibiting several of the most remarkable arms in Europe. The encroachments of this sea on the coasts of Germany and the Low Countries, have produced two gulfs, called the *Dollart* and the *Zuyder-Zee* (South Sea). An arm of the North Sea, between Jutland and the south of Norway, is called the *Skager-Rack*, and by some geographers the *Sea of Denmark*. One portion of it penetrates a deep inlet on the coast of Norway, and forms the *Gulf of Christiana* (Christiania-Fiord.) Another arm of the North Sea, between the south of Sweden and the northern portion of Jutland, takes the name of the *Kattegat*. Two arms of no great size fill the inlets of *Bukke* (Bukke-Fiord), and *Bergen*, on the south-western coast of Norway.

The Atlantic, as it stretches along the coast of Norway to the north of Cape Stadt, is named by some geographers the Scandinavian Sea; to the west of the Strait of Dover it is called the English Channel (*la Manche* by the French) between England and France; between Scotland and England on the one side, and Ireland on the other, it is named the Irish Sea, the southern outlet of which is St. George's, or the Irish Channel, and the northern the North Channel; it is called the Caledonian Sea to the north-west of Scotland; the Gulf of Gascony, along the south-west coast of France; and the Bay of Biscay, along a portion of the northern coast of Spain.

Two branches of the Atlantic Ocean penetrate the European continent, and form large Mediterranean Seas; — the one situate to the north, the other to the south.

The northern of these mediterraneans, the East Sea (Ost-See) of the Germanic and Scandinavian nations, but generally called the Baltic Sea, or simply the Baltic, is a great inland sea, situate between Denmark, Mecklenburg, Pomerania, Prussia, and the Baltic provinces of Russia and Sweden. Its most remarkable gulfs are — the *Gulf of Bothnia*, between the Grand-dutchy proper of Finland in Russia, and Nordland in Sweden; the *Gulf of Finland*, between the south-coast of Finland and the opposite coasts of the governments of St. Petersburgh and Esthonia or Revel; the *Gulf of Livonia* or *Riga*, between the governments of Livonia and Courland; and the *Gulf of Dantzic* in Eastern Prussia. The passage or channel of the Sound, and those of the Great and Little Belts, are the three openings by which the Baltic communicates with the Kattegat, which has already been noticed as a branch of the North Sea.

The southern mediterranean is named the Mediterranean Sea, or simply the Mediterranean. It lies between Europe, Asia, and Africa, and communicates with the Atlantic Ocean only by the comparatively narrow strait of Gibraltar. On the European side, this sea is called the *Balearic Channel* between the coast of the kingdom of Valentia and the group of the Baleares; the *Gulf of Lyons*, along the coast of France between Cape Creuz and Provence; and the *Gulf of Genoa*, from the coast of Nice to that of Lucca. It is named the *Sea of Tuscany*, between Corsica and Sardinia on the one side, and the coast of Italy on the other; the *Sea of Sicily*, between the island of that name and the opposite coast of Naples; and the *Ionian Sea*, between Sicily and the southern portion of Italy and the opposite coast of Greece. One arm of the Ionian Sea forms the *Gulf of Taranto*, between Calabria, the Basilicate, and Terra d'Otranto; another stretching between the islands of Santa Maura, Kephelonia, and Zante, and the opposite coast of Greece and the Peloponnesus, forms the *Gulf of Patras*, which the Strait of Lepanto connects with the *Gulf of Lepanto*, the eastern portion of which forms the *Bay of Livadostro* to the north, and the *Bay of Corinth* to the north. The Mediterranean, after penetrating through the Channel of Otranto, forms between Italy on the one side, and Dalmatia and Albania on the other, a vast gulf, commonly named the *Adriatic Sea*, an inlet of which in the neighbourhood of Venice is called the *Gulf of Venice*; another near Trieste, the *Gulf of Trieste*; and a third, situate between Istria and the opposite coast of military Croatia, the *Gulf of Fiume* or *Carnero* (Il Quarnero.) The Mediterranean, also, after entering the various openings between the islands of Cerigo, Cerigotto, Candia, Caso, Scarpanto, and Rhodes, forms another vast gulf, which separates the Peloponnesus from the opposite shores of Asia Minor. The ancient Greeks named this gulf *Aigaion-pelagos* (Ægean Sea), of which its modern name, the *Archipelago*, is probably a Frankish corruption. The singular indentations of the coasts of Greece and European Turkey form a great many secondary gulfs, the most remarkable of which are those of *Nauplia* and *Ægina* or *Athens*, in the newly-formed kingdom of Greece; of *Saloniki* and *Orphano* or *Contessa*, in ancient Macedonia; and of *Saros* in ancient Thrace.

Beyond the strait of the Dardanelles, the Archipelagan branch of the Mediterranean

expands into a small gulf, between the coast of ancient Thrace on the one side, and that of Asia Minor on the other, and which is inappropriately named the *Sea of Marmora*. It then, by means of the Straits of Constantinople, communicates with the *Black Sea*, a species of lake of vast size, included between the southern coast of Russia, the eastern coast of European Turkey, and the northern coast of Asia Minor. The Black Sea also presents several gulfs, of which the most remarkable are the extensive shallow lake which custom has improperly dignified with the title of *Sea of Azof*, and the gulfs of *Perecop* and *Odessa*; all of which belong to the coast of southern Russia.

The ARCTIC FROZEN OCEAN, which, as has been already stated, washes only the northern extremity of Europe, exhibits several gulfs, of which the most considerable is that called Bieloé Moré, or the White Sea. This extensive arm of the sea is nearly surrounded by the portion of the Russian territory that forms the government of Arkhangel. It has four principal gulfs, namely, those of *Kandalaskaia*, *Onega*, *Arkhangel* (the estuary of the Dvina), and *Mezen*.

The other principal gulfs of the Arctic Ocean are: — *West-Fiorden*, between the Lofoden Isles and the opposite coast of Finmark; the *Gulf of Warenger* (Warenger-Fiord), in Finmark; the *Gulf of Tcheskaia*, in the government of Arkhangel; and the *Gulf of Karskaia*, or *Kara*, between Nova Zembla and the opposite coasts of Europe and Asia.

The great expanse of water, named the CASPIAN SEA, or simply the CASPIAN, is, properly speaking, only the largest lake in the world. Its greatest extent of coast is on the Asiatic side.

EUROPE presents a coast-line nearly 15,000 miles in length. The superficial extent of its inland seas exceeds 1,800,000 square miles; the following table exhibits an estimate of each:—

	Square Miles.		*Square Miles.*
Mediterranean,	867,000	North Sea, or German Ocean,	244 000
Adriatic Sea,	62,400	Black Sea,	181,000
Basin comprehended between Candia and the Dardanelles,	73,400	Caspian,	141,900
Sea of Marmora,	3,800	Baltic with all its branches,	134,900
		White Sea,	38,000
		English Channel,	28,200
		St. George's Channel and Irish Sea,	25,900
Total of the Mediterranean,	1,006,600	Total of Inland Seas of Europe,	1,800,500

STRAITS. — Out of the great number of straits and channels uniting the different European seas and their branches, it may here be sufficient to enumerate the following, which are those that are the most important in reference to navigation: — The *Strait of Gibraltar*, between Spain and Morocco; it unites the Mediterranean to the Atlantic. The *Strait of Messina*, between the extremity of Calabria and Sicily; it forms the communication of the Ionian Sea with that of Sicily. The *Dardanelles*, and the *Strait of Constantinople*, both of which are formed by the coast of ancient Thrace, and the opposite coast of Asia Minor; the first unites the Archipelago and the sea of Marmora; the second the latter sea with the Black Sea. The passage or channel anciently named *Euripus*, between the island of Negropont and the opposite coast of Greece; this strait, so remarkable for the irregularity of its tides, terminates in the *Channel of Talanti* on the north, and the *Channel of Egripo*, or *Negropont*, on the south. The *Strait of Ienikale*, between the Crimea and the peninsula of Taman; it forms the passage between the Black Sea and the Sea of Azof. The *Strait of Calais*, between England and France; it unites the English Channel and North Sea. The *Pentland Firth*, between the northern extremity of Scotland and the southern portion of the Orkney Islands. The *Sound*, between Sweden and the island of Zealand; the *Great Belt*, between Zealand and the island of Fyen; and the *Little Belt*, between Fyen and the opposite coast of Jutland; these three straits form the communication between the Cattegat and the Baltic. The *Strait of Waygats* or *Vaigatch*, between Nova Zembla and the coast of the European continent, in the Russian government of Arkhangel; it is called the *Strait of Kara* by Russian geographers.

CAPES. — Among the many capes which this portion of the world presents, we shall here confine our notice to the following: — *Cape Zelania* (Cape Desire), the northern extremity of the island-group of Nova Zembla; *North Cape*, in the island of Magerōe, in Finmark, so celebrated from the description given of it by travellers; the *Nord-Kyn*, also called *Noss-Künn*, in Finmark, remarkable as being the northern extremity of the European continent. All these capes project into the Arctic Ocean.

On the shores of the Atlantic, and its branches, are found: — *Cape Skagen* or the *Skaw*, in the north of Jutland; *Cape La Hogue* (cap de la Hogue) in France, in the department of La Manche; *Cape Wrath*, in Sutherlandshire in Scotland; the *Land's End*, in Cornwall in England; *Cape Clear*, in the county of Cork in Ireland; *Cape Finisterre* (Land's End), in Galicia in Spain; *Cape Roca*, in Estremadura in Portugal, remarkable for its being the western point of the continent of Europe; *Cape St. Vincent*, in Algarva in Portugal.

In the Mediterranean and its branches we find: — *Cape Gata*, in the Spanish intendency of Granada, *Cape Palos*, in that of Carthagena, *Cape St. Martin*, in that of Valencia, and *Cape Creuz*, in that of Barcelona; *Cape Corso*, the northern extremity of the island of Corsica; *Point d'Anzo*, in the Comarca of Rome; *Cape Campanella* and *Cape Spartimento*, in the Principato Citra, kingdom of the Two Sicilies; *Cape Spartivento*, in Calabria-Ultra; *Cape Faro* and *Cape Passaro*, in the island of Sicily, the former in the intendency of Messina, the latter in that of Syracuse; *Cape Nau* or *Colonne*, on the east coast of the northern division of Calabria-Ultra; *Cape Leuca* (Santa Maria de Leuca), in the Terra d'Otranto; the *Promontore*, in Istria; *Cape Matapan*, in the Morea, held by all geographers to be the extreme southern point of the European continent, although the coast of Tarifa, in Andalusia, may lie under a more southern latitude; *Cape Maleo* or *St. Angelo*, also in the Morea; *Cape Colonna*, in ancient Attica; *Cape Emineh*, the eastern extremity of the Balkan mountains, on the shores of the Black Sea, and *Cape Chersonese* and *Cape Takli*, in the Crimea, in the same sea.

Of those in the Baltic, we may mention, *Cape Domesnes*, in the Gulf of Livonia, and *Cape Hangœ-Udde*, in the Gulf of Finland.

PENINSULAS. — From the manner in which the European continent is penetrated by the ocean and its branches, its outline exhibits a number of peninsulas, to which there is no parallel in any other portion of the world. The largest of these is the *Scandinavian Peninsula*, formed by Norway, Sweden, and Lapland. Next follow the three great peninsulas of Southern Europe, namely, the *Hispanian* or *Spanish*, which comprehends Spain, Portugal, and the republic of Andorra; the *Italian*, so remarkable for its odd form, resembling a boot; and the *Slavo-Grecian*, not less remarkable for the number of secondary peninsulas which its outline presents. Of the latter of these, it may be proper to notice the *Peloponnesus* or the *Morea*, so renowned in ancient history, and another, which may be named the *Macedonian*, bounded by the gulfs of Saloniki and Contessa, and which itself is divided into three other peninsulas, those of *Monte Santo*, *Toron*, and *Cassandra*. The other principal European peninsulas are the *Crimea*, in southern Russia; *Kanin*, in the Russian government of Arkhangel; *Jutland*, in the north of Germany; and a peninsula which comprehends the provinces of Holland and Utrecht, in the kingdom of Holland, and which may be named the *Netherlandish*. We may also remark, that the three departments of Finistère, Morbihan, and Côtes-du-Nord, form a large peninsula in the north-west of France. Many other peninsulas might be pointed out; but it would be idle to proceed with the enumeration of these, as they can easily be ascertained by consulting any accurate map of Europe.

RIVERS. — The whole of the rivers of Europe may be divided into six sections, corresponding with the different seas into which their waters flow. We shall here limit our attention to those of which the course is the longest; the others will be noticed in the descriptions of the countries which they traverse.

The Caspian receives the OURAL, which separates Europe from Asia; the VOLGA, which traverses the greater portion of European Russia; the KOUMA, which, according to the system proposed by Malte-Brun, and followed by several other geographers, should form part of the boundary line between Europe and Asia; and, finally, the TEREK. All these rivers are Russian.

The Mediterranean, including its branches, receives the DON, which falls into the Sea of Azof; the DNIEPER, DNIESTER, and DANUBE, which enter the Black Sea, (the river last named, and of which the course is only inferior to that of the Volga, having first traversed the whole of Southern Germany, Hungary, and European Turkey); the MARITZA and the VARDAR, rivers of European Turkey, which fall into the Archipelago; and the Po and the ADIGE in Italy, which flow into the Adriatic. The TIBER, which in its limited course bathes only an inconsiderable extent of the Tuscan territory, and a portion of the Papal States; the RHONE, which flows through the south-western portion of Switzerland, and the south-east of France; and the EBRO in Spain, all fall into the western branches of the Mediterranean.

The Atlantic Ocean and its branches receive the GUADALQUIVER, GUADIANA, TAGUS, and DUERO or DOURO, all of which flow through Spain, although the three last named terminate on the coasts of Portugal; the GARONNE, LOIRE, and SEINE, rivers of France, the first two of which fall into the Atlantic, and the last into the English Channel; the SCHELDT, the MEUSE or MAESE, and the RHINE (both of which combine to form the Meuse at its termination), the WESER and the ELBE, all of which fall into the North Sea — the first three after having traversed part of France, the Netherlands, and Germany — and the remaining two after watering a great part of Northern Germany; the GLOMMEN, the largest river of Norway, and the GÖTA or GOTHELBE, from Sweden, the first of which falls into the Skager-Rack, and the latter into the Kattegat; and the THAMES and HUMBER in England, which fall into the North Sea.

The Baltic and its branches receive the DALA, INDALS or RAGUNDA, ANGERMANN, UMEA, and LULEA, from the Norwegiano-Swedish monarchy, and the TORNEA from the latter country and the Russian territory; the NEVA, the DUNA or SOUTHERN DWINA, and the NIEMEN, from Russia; the VISTULA, the course of which is divided between the Austrian empire, the new kingdom of Poland, the republic of Cracow, and the kingdom of Prussia; and the ODER, the course of which is confined almost throughout to Prussia.

The Arctic Frozen Ocean receives the TANA from Finmark in Sweden; the PETCHORA from the Russian government of Arkhangel; and the KARA BAÏGARAMA, which in part separates Europe from Asia.

The White Sea receives the ONEGA, the NORTHERN DWINA or DVINA, and the MEZEN, which flow through a large portion of Northern Russia.

It has been estimated by Malte Brun, that representing all the waters discharged by the rivers of Europe by unity, the Black Sea receives, 0.273; the Caspian, 0.165; the Mediterranean, Sea of Marmora, and Archipelago, 0.144; the Atlantic Ocean, 0.131; the Baltic, 0.129; the North Sea, 0.110; the Artic Frozen Ocean, 0.048. In a preceding portion of our work (*see* p. 66), a Table will be found exhibiting the relative lengths, extent of basins, &c. of the principal European rivers.

LAKES. — A list of the lakes of Europe ought to commence with the *Caspian* in part; but in order not to go at once in the face of opinions sanctioned by custom and supported by weighty authorities, that great expanse of water has been included in our enumeration of the European seas. Of the European lakes (properly so called), the most considerable are those of *Ladoga*, *Saima*, *Pajana*, *Onega*, and *Peïpous* or *Tchoudskoï*, in Russia; and *Wener*, *Wetter*, and *Maler*, in Sweden. Then follow the *Lake of Constance* (Bodensee), between Germany and Switzerland; the *Balaton* or *Plattensee* in Hungary; the *Lac Leman* or *Lake of Geneva*, between Switzerland and Savoy; lakes *Garda* (Lago di Garda) and *Maggiore* (larger), in Northern Italy; and many others which shall be mentioned in the descriptions of the countries in which they are situated.

The following Table exhibits the superficial extent of the principal European lakes: —

	Square Miles.		*Square Miles.*
Ladoga (*Russia*),	6,330	Constance (*Switzerland*),	290
Onega (*Idem*),	3,280	Ilmen (*Russia*),	275
Wener (*Sweden*),	2,136	Lexa (*Idem*),	229
Saimas (*Russian Finland*),	1,602	Ulea (*Russian Finland*),	229
Peipous (*Russia*),	839	Garda (*Austrian Italy*),	183
Wetter (*Sweden*),	839	Maggiore (*Idem*),	152
Mælar (*Idem*),	763	Tavesthus or Nesi (*Russian Finland*),	152
Enara (*Russian Lapland*),	656	Balaton (*Hungary*),	152
Kuopio (*Russian Finland*),	610	Neuchatel (*Switzerland*),	114
Bielo-Osero (*Russia*),	53	Lake of the Four Cantons (*Idem*),	99
Geneva (*Switzerland*),	336	Zurich (*Idem*),	76

ISLANDS. — In the special descriptions of the countries of Europe, notice shall be taken of the principal islands belonging to each. In the present enumeration we shall confine our attention to the largest, and to those which from their relative situation (the only basis of a sound classification) ought to be considered geographical dependencies of Europe. All the European islands may be arranged in four leading divisions, corresponding with the number of the different seas in which they are found.

1. ISLANDS AND ARCHIPELAGOES* IN THE ATLANTIC OCEAN AND ITS BRANCHES. —

* In reference to *island groups* and *archipelagoes* we shall throughout this work follow Balbi's classification, which is founded on principles which he thus defines: — A *group* is formed by a few islands placed at no great distance from one another, or by a principal island surrounded by several others much smaller in size: an *archipelago* is composed of several islands, which vary in extent, some placed so near as to be seen from each other, and others at greater distances. The very remote or outlying islands connected with a group or an archipelago, are sometimes denominated its *sporades*.

The islands composing the *British Archipelago*, among which are included *Great Britain* and *Ireland*, the two largest islands in Europe, take the lead in this class. Next follow a number of much smaller islands, such as *Vigeroe*, *Hitteren*, &c. on the coast of Norway; the little archipelago of the *Feroe Isles*, belonging to Denmark; *Walcheren*, and the two islands of *North* (Noorde) and *South* (Zuid) *Beveland*, in the Dutch Archipelago; the islands of *Jersey*, *Guernsey*, and *Alderney*, situated between Normandy and Britanny (Bretagne) in France, although political dependencies of Great Britain; the little islands of *Oléron* and *Ré*, opposite the coast of the department of the Lower Charente (Charente-Inférieure), in France; and the Archipelago of the *Açores* or *Azores*, belonging to Portugal, and of which *Terceira* and *St. Michael* are the most important islands.

2. ISLANDS AND ARCHIPELAGOES IN THE MEDITERRANEAN AND ITS BRANCHES. — This division consists of the *Balearic Isles*, of which *Majorca* is the largest; the large islands of *Corsica*, *Sardinia*, and *Sicily*, the little island of *Elba*, and the diminutive group of *Malta*; the *Ionian Isles*, among which *Corfu* and *Cephalonia* are the most remarkable for extent, and *Zante* for importance; *Candia*, one of the largest of the European islands; the numerous islands of the *Grecian Archipelago*, or the *Archipelago* (properly so called) among the European portion of which *Negropont*, *Naxia*, *Andro*, *Lemnos* or *Stalimene*, *Thaso*, &c. &c. are to be remarked for their size, and *Hydra*, *Spezzia*, and *Ægina* for their importance; and finally, on the coast of Dalmatia and in the Adriatic Sea, the islands of *Lissa*, *Brazza*, *Veglia*, *Cherso*, and several others of lesser extent.

3. ISLANDS AND ARCHIPELAGOES IN THE BALTIC. — This class presents first in order the *Danish Archipelago*, in which are found the islands of *Zealand*, *Fyen* or *Funen*, *Falster*, and some others less considerable in extent; then follows *Bornholm*, a dependency of Denmark; *Oland* and *Gottland*, belonging to Sweden; and the Archipelago of the *Aland Isles*, and the islands of *Dago* and *Œsel*, all of which belong to Russia.

4. ISLANDS AND ARCHIPELAGOES IN THE ARCTIC FROZEN OCEAN AND ITS BRANCHES. — This series commences on the west with the *Lofoden-Magerœ* group in the *Norwegian Archipelago*, in which we find the island of *East Waagen* (Ost-Waagen), the central point of the valuable fishery carried on along the coast of Norway; *Hindoen*, the largest island in the group; *Senjen*, and *Magerœ*, the northern point of which is the celebrated North Cape. To the east of these are *Kalgouev Island*, near the entrance to the White Sea; the large group of *Nova Zembla* (Novaya Zemlia, *i. e.* New Land), long believed to be but a single island, but now found to consist of two; and the island of *Waygats* or *Vaigatch*, which forms part of one of the coasts of the strait of the same name. Returning eastward along a higher parallel of latitude, we find *Cherry* or *Baren* (Bear) *Island*, to the north of Finmark; and farther to the north the archipelago of *Spitzbergen*, which from the distance and the westerly direction of the east coast of Greenland, ought certainly to be ranked as a geographical dependency of Europe, although it is commonly attached to America. Russia claims Spitzbergen as a dependency, but its shores are not on this account the less frequented by English, Danish, Hamburgh, Norwegian, and other mariners, who are attracted thither by the abundance of whales, white bears, narwals, and other large mammiferous animals. This archipelago consists of three large islands, and several others inconsiderable in point of size. *Nord-Ostlande* (North-East Land) is the most northern of these islands; on its north coast is the little group of the *Seven Islands* or *Seven Sisters*, which merit attention from the circumstance that they are the most northern land as yet discovered. *Spitzbergen* (properly so called), or as it is denominated in recent charts *New Friesland*, is the largest island in the group; on its western coast is Smeerenburg, a hunting station, established many years ago by a company of Arkhangel merchants, and which may be considered the most northern of the inhabited parts of the globe, although it is occupied only during a portion of the year. *Edges Island*, called also *South-East Island*, is the third in point of size in the Spitzbergen group; the smaller island of *Charles* lies to the west of New Friesland.

MOUNTAINS. — The mountains of Europe may be classified into thirteen systems, of which nine are continental, and four insular. Two of the continental systems, namely, the *Ouralian* and *Caucasian*, belong in common to Europe and Asia; but as their ramifications are mostly connected with the latter, they will be described under the head of the Physical Geography of that portion of the world. The other seven are confined wholly within the limits of Europe. Their names are — the *Hesperian*, *Gallo-Franconian*, *Alpine*, *Slavo-Hellenic*, *Slavonic*, *Hercynio-Carpa-*

thian, and *Scandinavian*. The four insular systems are — the *Sardo-Corsican* in the Mediterranean, the *Britannic* and *Açorian* in the Atlantic Ocean, and the *Boreal* in the Arctic Frozen Ocean.

The HESPERIAN SYSTEM is thus denominated, as it comprehends all the mountains and plateaus of ancient Hesperia, now the kingdoms of Spain and Portugal. This system, of which the whole of the mountains of France situate to the south of the Garonne and the Southern Canal, or Canal of Languedoc, are also members, may be divided into three leading groups, named the Southern, Central, and Northern; and these again into several component chains. It must be remarked, however, that the arrangement thus proposed is somewhat arbitrary, as the principal chains in the Spanish peninsula differ alike in aspect and internal structure, and are not members of a great mountain system.

Several geographers, indeed, misled by the fanciful manner in which the mountains are delineated in the older maps of Spain, state that a great chain, called the *Iberian*, extends across the peninsula nearly from north-west to south-east, from which all the other chains are detached as lateral branches. This certainly is the actual direction of the chain which in the following classification is named Celtiberian; but on examining any accurate map it will be found that the mountain ranges and groups of which this chain is composed are but imperfectly connected; and recent measurements prove, that with the exception of the sierras of Occa and Molina, their summits nowhere attain any considerable elevation.

The Southern Group includes all the mountains south of the Tagus and west of the Celtiberian chain. It is subdivided into three chains, which are named in Balbi's work, the Pœni-Betican, Marianic, and Oveto-Herminian — terms derived from the ancient geography of the country. 1. The *Pœni-Betican Chain*, which follows the south coast of Spain throughout the whole extent of the kingdom of Granada, and which contains the highest mountains in the peninsula, is formed by the *Sierra Nevada* on the east, and the *Sierra de Rondo* on the west; its middle connecting links being the *Sierra de las Cabras* or *Lasa*, and the *Sierra de Tolos*. Its principal branches detached towards the coast are the heights of *Aljamilla* or *Ujamilla*, a little to the north and east of Cape Gata; the *Sierra de las Alpujarras* (which includes on the east; the *Sierra de Gador*, the *Contraviesa*, and the *Sierra de Lujar*), extending between the Almeria and Guadalfeo rivers; and the heights of *Mijas* and *Bermeja*, a little to the south-west of Malaga. 2. The *Marianic Chain* commences in the south-east of La Mancha, and runs in a south-westerly direction, under the name of the *Sierra d' Alcaraz* at its eastern extremity; *Sierra de Segura* between the intendencies of Murcia and Jaen; *Sierra Morena* in the intendencies of La Mancha, Jaen, and Cardova; and *Sierra d' Aracena* and *Sierra Albaleyra* in that of Seville, where, crossing the Guadiana, it unites with the *Sierra Caldeirao* and *Sierra Monchique* in the kingdom of Algarve. 3. The *Oreto-Herminian Chain*, commonly known by the names — *Mountains of Consuegra*, *Sierra de Yrocenes*, *Mountains of Toledo*, *Sierra de Guadaloup*, and *Sierra de St. Mames*, divides the beds of the Tagus and Guadiana throughout the whole extent of the intendencies of Toledo and Badajoz in Spain, and Alemtejo in Portugal.

The Central Group consists of the mountains between the Douro and Tagus; also those ranges which, commencing in the north-west, near the source of the Ebro, stretch in a south-easterly direction as far as Cape Palos. It is subdivided into the two following chains: — 1. The *Carpeto-Vettonic Chain*, which commences in the *Somo-Sierra* and *Guadarrama Mountains*, between Old and New Castile, is continued in the sierras of *Gredos*, *Francia*, and *Gata*, between the intendencies of Salamanca and Badajos; then stretching into Portugal, includes the *Sierra d' Estrella* in Beira, and terminates in the *Sierra de Cintra* in Portugese Estremadura. 2. The *Celtiberian Chain*, which stretches between the source of the Ebro and Cape Palos, taking successively the names of *Sierra d' Oca*, in the intendency of Burgos; *Sierra de Moncayo*, in the intendencies of Soria and Aragon; *Sierra de Molina* and *Sierra de Alberracin*, in the latter intendency and that of Cuença; and various other names as it extends from the western frontier of the province of Valencia, to the south-eastern extremity of that of Murcia. The mountains in the Balearic Islands may be regarded as dependencies of a detached chain belonging to this group, which terminates in Cape St. Martin in Valencia.

The Northern Group or the Pyrenees constitutes a great chain, which extends from Cape Creux, on the side of the Mediterranean, to Cape Finisterre on the Atlantic. Following the arrangement recently proposed by Balbi, that portion of the chain which seperates France from Spain, may be named the Galliberian Pyrenees. To these succeed the Cantabrian Pyrenees, extending from the Galliberians to the sources of the Ebro; the Asturian Pyrenees, between the Cantabrian Mountains and the sources of the Navia; and the Galician Pyrenees, extending from the Navia to Cape Finisterre in Galicia.

Many secondary chains or ridges are detached from the principal chains, and are worthy of notice, particularly those which branch out from the Cantabrian Pyrences. The most continuous of these ridges is that to the south and east of the Minho and its tributaries, formed by the sierras of *Penamerella*, and *Destredos*, and *Monte Tolano*, in the west of Leon; the sierras of *Segundera*, *Seca*, *St. Mamed*, and *Peneagoche* in the south of Galicia; the *Sierra d' Estrica*, which separates the Minho and the Lima; and the *Sierra de Catarina* in the south-east of Entre Douro e Minho, in which the range terminates, not far from a portion of the Carpeto-Vettonic chain. Near the sources of the Ebro a little group of eminences forms another connecting link between the great northern and central groups. A third chain, branching out from the southern slopes of the Galliberian Pyrenees, extends into Catalonia, and there forms numerous little groups and plateaus.

TABLE OF THE CULMINATING POINTS AND OTHER HEIGHTS IN THE HESPERIAN SYSTEM.

	Feet.
PŒNI-BETICAN CHAIN, or SIERRA NEVADA,—	
Pichaco de Mulhacen, N. Lat. 37° 6′, W. Long. 3° 10′,	11,657
Pichaco de Velcta, N. Lat. 37° 4′, W. Long. 3° 14′,	11,389
Sierra de Tejada, to the south of Alhama,	7,671
The *Alpujarras* in general,	9,165
Sierra de Gador, N. Lat. 36° 55′, W. Long. 2° 40′,	6,575
Sierra de Lujar, N. Lat. 36° 47′, W. Long. 3° 15′,	6,270
Town of *Ronda*,	3,281
Rock of *Gibraltar*,	1,437
MARIANIC CHAIN,—	
Almaradieb, in the Sierra Morena,	2,438
Puerto de Rey, in the Sierra Morena, to the south of Calzada,	2,274
Sierra d' Aracena,	5,499
The *Foya*, culminating point of the Sierra Monchique, N. Lat. 37° 20′, W. Long. 8° 34′,	4,079
Monte Figo, in the Sierra Caldeirao, N. Lat. 37° 10′, W. Long. 7° 50′,	2,129
ORETO-HERMINIAN CHAIN,—	
Sierra de Guadaloupe, on the borders of Toledo and Estremadura,	5,115
Sierra de St. Mames, culminating point near Portalegre,	2,129

	Feet.
CARPETO-VETTONIC CHAIN,—	
Pass of the *Somo-Sierra*, in the NW. of Guadalajara,	4,944
Buytrago, a little to the SW. of the Somo-Sierra, N. Lat. 40° 59′, W. Long. 3° 38′,	3,330
Penalara, a little to the N. of the Escurial,	8,223
Palace of the *Escurial*,	3,264
Sierra de Gredos, N. Lat. 40° 38′, W. Long. 5° 17′,	10,551
Pena de Francia, a little to the SE. of Ciudad-Rodrigo,	5,689
Serra d' Estrella, N. Lat. 40° 19′, W. Long. 9° 57′,	7,524
Serra de Cintra, to the W. of Lisbon,	1,918
CELTIBERIAN CHAIN,—	
Sierra d' Oca, a little to the W. of Burgos,	5,450
Sierra de Moncayo, about 6 miles to the E. of Soria,	4,900 ?
Sierra de Molina, about 7 miles SSE. of the town of that name,	4,500
Mountains in the Balearic Isles,—	
Puig de Torcella, in the N. of Majorca,	4,801
Mount Toro, in Minorca,	4,793
GALLIBERIAN PYRENEES,—	
Southern Face,—	
Maladetta, or *Mont Maudit* (its eastern summit the *Pic de Netou*), in the NE. of Aragon, N. Lat. 42° 38′, E. Long. 0° 47′,	11,426
Glacier of the *Maladetta*,	8,760
Pic Posets, in the NE. of Aragon, N. Lat. 42° 40′, E. Long. 0° 31′,	11,279
Pic de Biedous, in the same group as the preceding, N. Lat. 42° 41′, E. Long. 0° 29′,	10,014
Mont Perdu, on the Spanish frontier, about 10 miles to the N. of Fiscal in Aragon, E. Long. 0° 3′,	11,170
Cylindre du Marboré, to the W. of Mont Perdu, in the same group,	10,050
Central Ridge,—	
Pic Pedrous, on the French frontier, to the E. of the port of Puymoreins, valley of the Arriege, N. Lat. 42° 34′, E. Long. 1° 56′,	9,511
Pic Lanous, at the head of the valley of the Arriege,	9,370
Pass of *Puymoreins*, valley of the Arriege,	6,299
Pic de Fonte Argente, in the SE. of the department of Arriege, N. Lat. 42° 37′, E. Long. 1° 47′,	9,370
Pic de Serrere, at the head of the valley of the Arriege,	9,646
Peak of the *Port* (or Pass) *de Siguier*, in the same group, N. Lat. 42° 39′,	9,613
Port (or Pass) *de Rat*, at the head of the valley of the Vic de Sos, in Arriege, N. Lat. 42° 38′, E. Long. 1° 35′,	7,473
Montcalm or *Montcal*, at the head of the same valley, on the French and Spanish frontiers, N. Lat. 42° 41′, E. Long. 1° 30′,	10,663
Pic d' Estats, in the same group, N. Lat. 42° 40′, E. Long. 1° 28′,	10,611
Montvalhier, at the head of the valley of the Sallat, Arriege, N. Lat. 42° 46′, E. Long. 1° 6′,	9,249
Montoulton or *Tuque de Mauberme*,* on the French and Spanish frontiers, to the SW. of Castillon, in Arriege, N. Lat. 42° 46′, E. Long. 0° 59′,	9,492
Pic de Rious, to the S. of the valley of Aran, in the NW. of Catalonia,	9,620
Port de Viella, in the NW. of Catalonia,	8,222
Port de Picade, at the head of the valley of Luchon, Upper Garonne,	7,950
Port de Vanasque, in the NE. of Aragon,	7,917
Passes of *Glere*, *Oo* (at the head of the valley of Larboust), *Clarabide* (at the head of the valley of Louron), *Lapex*, *Plau* (at the head of the valley of Riomajou), *Viel* (between the valley of Cinca and that of Estaubé), *Pinède* and *Brèche de Roland*, all of them situated to the W. of the pass of Vanasque, and to the E of that of Gavarnie, (*which see*)— average height,	8,660
Carabioules, at the head of the valley of Lys, N. Lat. 42° 42′, E. Long. 0° 37′ ?	10,545
Tuque de Maoupas, in the same valley,	10,325
Pic de Fourcanade, N. Lat. 42° 40′, E. Long. 0° 49′ ?	10,030
Pic de Baroudes, head of the valley of the Aure, in the SE. of the department of the Upper Pyrenees,	9,787
Troumouse, in the same group, N. Lat. 42° 43′, E. Long. 0° 13′ ?	10,496
Pic de Cascade,	10,745
Tour du Marboré, on the French frontier to the S. of Luz, Upper Pyrenees,	9,964
Le Taillon,	10,314
Port de Gavarnie, SSW. from Luz, Upper Pyrenees,	7,654
Vignemalle, to the S. of Cauteret, in the SW. of the Upper Pyrenees,	11,001
Pic de Badescure,	10,325
Pic du Midi d' Ossau, or *Arrieu Grande*, at the SE. extremity of the department of the Lower Pyrenees,	9,406
Soube, another summit in the same group,	10,276
Port de Canfranc, S. of the Pic du Midi,	6,713
Pic de Anie, or *Mont Anialana* or *Billari*, on the French frontier, SSW. from Oleron,	8,478
Mont Hory, to the N. of Roncal, in the NE. of Navarre,	6,591
Summit of *Ahady*, source of the Nive,	4,790
Port de Roncevaux (Roncevallos), to the S. of St. Jean Pied de Port, in the Upper Pyrenees, and to the NE. of Pampeluna, in Navarre,	5,771
Port d' Arraiz,	4,347
Northern Face,—	
Mont Canigou, to the W. of Ceret and S. of Prades, department of the Eastern Pyrenees, N. Lat. 42° 31′, E. Long. 2° 25′,	9,144
Le Trexevent, *Le Pastor de Canigou*, Town of *Mont Louis*, } in the same group,	7,590 / 5,952 / 5,210
Roc Blanc, source of the Aude, in the SW. of the department of the Eastern Pyrenees,	8,330
Mont Mousset, N. Lat. 42° 40′, E. Long. 2° 20′ ?	7,901
Pic d' Endron, N. Lat. 42° 43′, E. Long. 1° 28′ ?	6,733
Mont Carbere, in the W. of the department of Arriege,	8,655
Lake of *Toro de Viella*, Lake of the Port de Vanasque, } to the SW. of Bagneres de Luchon,	6,611 / 7,271

* *Tuque* or *tuc*, in the *patois* of the country, signifies peak or summit.

	Feet.
GALLIBERIAN PYRENEES.—*Northern Face* (continued) —	
Pic Quairat, N. Lat. 42° 43′, W. Long. 0° 37′,	9,964
Pic du Hermittane,	9,933
Frozen Lake at *Port d' Oo*,	8,806
Pic d' Arbizon, valley of the Aure to the W. of Arreau, department of the Upper Pyrenees,	9,544
Cirque de Troumouse,	6,778
Brèche de Tuque-rouge,	9,529
Pic d' Aiguillon, (in the same group as the preceding)	9 685
Pic Long,	10,584
Pic de Neouvielle,	10,145
Pic Cambielle,	10,611
Pic du Midi de Bigorre, a little to the S. of Bagneres de Bigorre,	9,592
The Cascade of Gavarnie,	7,648
Mountains of Catalonia,—	
Monserrat, about 32 miles NW. of Barcelona,	4,054
CANTABRIAN PYRENEES,—	
Sierra d' Aralar, in the SE. of Guipurçoa,	7,096
ASTURIAN PYRENEES,—	
Sierra de Sejos, on the frontiers of Santander and Palencia,	5,700
Sierra Alba, in the SW. of Santander,	6,969
La Pena de Penarenda, the source of the Sil, in the NW. of Leon,	10,998
Sierra de Penamarella, in Galicia, at the junction of that province with Leon and Asturias,	9,464
La Pena Trevinca,	9,591
Secondary Chains in the South,—	
Sierra de St. Mamed, source of the Lima and Tamega, in the S. of Galicia,	7,716
Gaviara, in the NE. of Entre Douro e Minho, in Portugal,	7,886

GALLO-FRANCIAN SYSTEM. — Under this designation, as a collective name, it is proposed to include all the mountains of France which are situate to the north of the Garonne and the Languedoc Canal; and to the west of the Rhone (below Lyons), of the Soâne (below Châlons), of the Doubs (below the neighbourhood of Montbéliard), and of the Rhine (below Bâle). In this system there is no appearance of a continuous principal chain, but it rather consists of a series of small plateaus surmounted by mountains, or more frequently by mere hilly eminences. The range, which seems most to take a uniform direction from south-west to north-east, may be named the Ceveno-Vosgian Chain. That portion of it called the Cévennes,* assumes the names of *Black Mountains* in the departments of the Aude and the Herault; *Mountains of the Espinouse* between the departments of the Tarn and the Aveyron on the west, and that of the Herault on the east; *Garrigues*, in the Aveyron and the Gard; the *Gévaudan* or *Cevennes* (properly so called), in the Lozère; *Mountains of the Vivarais*, in the Ardèche; the *Lyonnais Mountains*, in the Rhone; and the *Charolais* and *Maconnais Mountains*, in Saône-et-Loire. The heights of the *Côte-d' Or*, in the department of that name; the *Plateau of Langres*, in the Haute (or Upper) Marne; and the *Faucille Mountains*, in the department of the Vosges, form the connecting link between the northern elevations belonging to the Cévennes and the Chain of the Vosges, a ridge which separates the ancient province of Alsace from that of Lorraine, and stretches northward into the Bavarian circle of the Rhine.

Many ranges, mostly of no great length, although in a few instances so far prolonged as to justify the designation of chains, diverge laterally from the western slope of the line of heights which has been pointed out in the preceding paragraph as the leading series. In this respect, it is to be observed that the Ceveno-Vosgian Chain, from its uniform direction, length, and a number of other circumstances which do not admit of being briefly detailed, merits the distinction thus claimed for it, although the most elevated summit in the system of which it forms a part are found in the mountains of Auvergne and those of Forez. Our notice of the lateral branches must be confined to those which are the most important. One branch, called the *Levezou*, stretches south-west from Mont Lozere in the Cévennes; while from nearly the same point the *Mountains of Aubrec* extend towards the north-west. In the same direction the Mountains of Margeride are prolonged to their union with the Mountains of Auvergne, in the departments of the Cantal and the Puy-de-Dôme. To the west of the huge basaltic mass which forms the Monts-Dores, in the Auvergne Mountains, several detached heights extend westward into the departments of the Corrèze, Creuse, Upper-Vienne, Charonte, and the Deux-Sèvres. In one part these eminences form a long but not very elevated series of ridges, which terminates near the mouth of the Loire; its highest points are Mont Olouze, Mont Jurgean, and the *Gatine Mountains*; the last of which separates the northern portions of the departments of the Deux-Sèvres and Vendée.

To the south of Puy, the Mountains of the Vivaraise send off another chain, which, under the name of Mountains of Forez, traverse the departments of the Upper-Loire, and those of the Puy-de-Dôme and the Loire.

A series of heights sets out from the eastern extremity of the Plateau of Langres, and, under various designations, is extended into the departments of the Meuse, Ardennes, and the Moselle, in France; the Grand-duchy of Luxemburg and the provinces of Namur and Hainaut in Belgium, and into the western portion of the kingdom of Prussia. The French and Belgian portion of these heights may be named the Ardennes. The others, which we shall notice at present, are the Hundsrück or Back of the Dog, in the Prussian governments of Coblentz and Treves; the volcanic hills which form the Eifel Geblrge (or chain), in the governments of Coblentz, Aix-la-Chapelle, and Treves; and the marshy ridge of the Hoch-Veen, in that of Aix-la-Chapelle.

The chain, for the most part granitic, which runs through the departments of Eure-et-Loire, Orne, Manche, Ille-et-Vilaine, Côtes-du-Nord, Morbihan, and Finistère is only, properly speaking, a range of little hills, in common usage dignified by the designation of Mountains, and which erroneously has been regarded as a branch of the Cévennes, although the two ridges are separated by extensive plains. This range is named by Malte-Brun the Armorican Chain, and it forms, according to his classification, the second of the two great divisions which compose the mountain system of France, or the Franco-Celtic group, the first division being, as in the classification we have adopted, the Ceveno-Vosgian Chain. The Armorican Chain, consisting of four great divisions, which extend in different directions, commences on the western coast in that portion of ancient Brittany which now forms the department of Finistère. Here it divides into two branches, called the *Arree* and *Black Mountains*, the former situate to the north of the Aulne, and the latter to the south of that river. The heights of *Menez* extend eastward through the department of the Côtes-du-Nord; and a range of hills, commencing near the Vilaine, runs towards the south, and but for the course of the Loire, would unite

* A ridge that separates the waters that run towards the Atlantic Ocean from those that flow into the Mediterranean.

with a portion of the Ceveno-Vosgian Chain. The northern extremity of one branch forms Cape La Hogue; another on the east stretches to the heights of *Beauce*, in the department of Eure-et-Loir.

TABLE OF THE CULMINATING POINTS AND OTHER HEIGHTS IN THE GALLO-FRANCIAN SYSTEM.

	Feet.
CEVENNES.	
Black Mountains,—	
Pic Montant,	3,415
Cèvennes Proper,—	
Mont Lozere, in the department of that name, N. Lat. 44° 45′, E. Long. 3° 50′	4,884
Source of the *Allier*,	4,689
Mont Marguerite,	4,994
Mountains of the Vivaraise,—	
Source of the *Loire*, in Mont Gerbier Jones,	4,593
Mont Gerbier Jones, N. Lat. 44° 45′, E. Long. 4° 15′,	5,125
Mont Mezenc, N. Lat. 44° 54′, E. Long. 4° 10′ (?) *	5,819
Mountains of the Lyonnaise,—	
Mont Pilat, a little to the S. E. of St. Etienne, department of the Loire,	3,516
Mont Tarare, fifteen miles WNW. of Lyons,	4,755
Charolaise Mountains,—Culminating Point,	2,557
Mâconnaise Mountains,—Culminating Point,	2,129
Lateral Chains to the West of the Principal Chain.—	
Mountains of Margeride,—	
Mont Boissier,	4,923
Montagne de Folletin, N. Lat. 44° 46′, E. Long. 3° 54′,	4,488
Town of Pradelles, in the department of the Upper Loire,	3,722
Mountains of Auvergne,—	
Plomb de Cantal, 10 miles WSW. of Murat,	6,093
Puy-Mary, volcanic Peak, to the NW. of the Plomb,	6,113
Puy de Sancy, summit of the Monts-Dores, a little to the W. of Besse, in the SW. of the department of Puy de Dôme,	6221
Puy de Dôme, about 10 miles W. of Clermont,	4,846
Puy de l'Angle,	5,748
Puy de Mareith,	5,161
Puy de la Haute Chaux,	5,637
Puy de Tribou,	5,591
Forez Mountains,—	
Pierre-sur-Haute,	5,426
CHAIN OF THE VOSGES.—	
Tasselot, culminating point of *Mont Côte d'Or*,	1,962
Source of the *Seine*, near Chanceaux, department of Côte d'Or,	1,427
Mont Afrique, culminating point of the Plateau of Langres,	1,873
Les Fourches, the highest point in the Faucille Mountains,	1,610
Ballon de Lure, in the department of the Upper Saône,	3,721
Source of the *Oignon*, in the same department, and to the NE. of Lure,	2,276
Ballon d'Alsace, at the SW. extremity of the department of the Vosges, N. Lat. 47° 49′, E. Long. 6° 52′,	4,124
Bœhrenkopf, N. Lat. 47° 47′, E. Long. 6° 54′,	3,064
Ballon de Guebwiller, or *Sultz*, in the department of the Upper Rhine, N. Lat. 47° 54′, E. Long. 7° 6′,	4,693
Source of the Saône, in the department of the Vosges,	1,299
Source of the *Moselle*, between Bassan and Orbé, department of the Upper Rhine,	2,379
Le Grand Donnon, at the SE. extremity of the department of the Meurth, N. Lat. 48° 31′, E. Long. 7° 10′,	3,314
Source of the *Surre*, at the foot of the Great Donnon,	1,765
Mont Tonnere, or the *Donnersberg*, in the Palatinate of Bavaria, N. Lat. 49° 37′, E. Long. 7° 56′,	2,235
The *Ardennes* in general,	1,800
The *Eifel* or *Eyffel Gebirge*,	1,694
Heights of the *Hoch-Veen*,	2,291?
The *Seine*, at Paris,	111
Observatoire de Paris (1re étage),	240
ARMORICAN CHAIN,—Culminating Point,*	1,260
Heights of *Arree*,	995
Black Mountains,	816

ALPINE SYSTEM; or SYSTEM OF THE ALPS (properly so called).—This system, with which geographers in general for long connected all the mountains of continental Europe, and in which many of them still include those which we have grouped into the systems named the *Gallo-Francian*, *Hercynio*, *Carpathian*, and *Slavo-Hellenic*, will, according to our arrangement, comprehend only the mountains situate to the east of the Rhône and Doubs, to the right of the Danube, and to the west of the Unna, a tributary of the Save. By combining to the utmost possible extent, the divisions and designations which are generally recognised, with the facts collected by travellers and by numerous authors who have made the Alps the subject of their writings, we think that this great system may be described in the following manner:—

It consists of a *Principal Chain*, which several times changes its direction, and takes the following names:—1. *Maritime or Ligurian Alps*, from the Col (or Pass) de Tende,† as far as Mont Viso;

* The situation of this point is not stated in Balbi's Table.

† It is sometimes advanced that the Maritime Alps commence at the Litimbro, a mountain torrent which falls into the Gulf of Genoa, to the west of Savona. This opinion has been sanctioned by Napoleon in his campaigns; by M. Bruguière in his learned Geography of Europe, and for some years past has been held by the whole body of French geographers. As, however, the inhabitants of the country apply the name *Apennines*, and not Alps, to the mountains situate to the east of the Col de Tende, we are induced to adopt the ancient commencement, the more so that the lesser height of these mountains, and the identity of their features, sufficiently indicate that this portion of the chain belongs really to the Apennines, and not to the Alps.—*Balbi*.

this portion of the chain proceeds first from east to west, and afterwards from south to north, forming the northern boundary of the province of Nice, and then separates Provence in France from the Sardinian province of Cuneo: 2. *Cottian Alps*, from Mont Viso as far as Mont Cenis, between the province of Turin on one side, and the department of the Upper Alps in France, and Savoy in Sardinia, on the other: 3. *Graian or Grecian Alps*, from Mont Cenis as far as the Col du Bonhomme, between the provinces of Turin and Aosta on the east, and Savoy on the west: 4. *Pennine Alps*, from the Col du Bonhomme, as far as Mont Rosa, between the Sardinian provinces of Aosta and Novarra on the one side, and Savoy and the Valais in Switzerland on the other: 5. *Lepontine or Helvetian Alps*, from Mont Rosa as far as Mont Bernardin, between the province of Novarra and the canton of Tessin, on one side, and the cantons of the Valais, Uri, and the Grisons, on the other: 6. *Rhætian Alps*, from Mont Bernardin as far as the Drey-Herren-Spitz (Three Lord's Point or Peak), between the Valtelline and Southern Tyrol, on one side, and the Grissons and Northern Tyrol, on the other: 7. *Noric Alps*, from the Drey-Herren-Spitz as far as the neighbourhood of Vienna, stretching through Salzburg, Styria, and Upper and Lower Austria; *Schneeberg* in Lower Austria, and the *Semering*, on its southern border, are the culminating points of this extreme portion of the principal chain. On the north, the *Khalenberg*, situate also in Lower Austria, extends towards the Danube, gradually diminishing in elevation till it is lost in the plain of Vienna. A southern branch commences at Semering, near the source of the Raab, and following the course of that river into Hungary, terminates in the hills of the *Bakonier-Wald*, between the Danube and Lake Balaton.

Among the numerous ranges or chains which are detached from the principal chain, the following alone merit (from their importance) to be noticed in this place:—

In the neighbourhood of Mont St. Gothard, in that portion of the principal chain called the Lepontine or Helvetian Alps, three branches are detached from the main ridge, which soon subdividing into several others, extend over the whole face of Switzerland. The most elevated of these is the chain of the *Bernese Alps* (or as it is designated by M. Bruguière, the Northern Chain, in opposition to that which forms part of the principal chain, and of which the relative position is southern), proceeds towards the west, and separates the Valais from the canton of Berne. Another branch proceeds northward between the cantons of Berne and Uri, and extends into those of Unterwald and Lucerne. The third principal branch separates the Four Cantons from the Grisons, and extends in several ridges to the Lake of Constance. The ridge of the Jorat, on the north side of the Lake of Geneva, which forms a connecting link between the principal chain of the Alps and the Jura mountains, may be considered a prolongation of the Bernese chain. The Jura Mountains consist of several ranges parallel to one another, of which the most eastern, which is also the most elevated, extends from the bend or elbow described by the Rhone, in the east of the department of the Ain, to the confluence of the Aare and Rhine.

Near Mont d'Oro in the Rhætian Alps a branch sets out from the main ridge, and after separating the upper valleys of the Rhine and Inn, crosses the Vorarlberg. In this portion of the Austrian empire, the branch in question, which we propose to name the Vorarlberg Chain, separates into two ridges, one of which, proceeding westward to the south of the Danube, penetrates into Swabia, and approaches the heights of the Swartz-Wald or Black Forest, the western extremity of the Hercynio-Carpathian system; the other, the heights of which in one part are called *Algæu*, stretches into southern Bavaria, and separates the upper valley of the Inn from that of the Iser.

To the south of the Drey-Herren-Spitz, in the western portion of the Noric Alps, a ridge is detached, which running south separates the valley of the Rienz, a tributary of the Adige, from that of the Drave, a tributary of the Danube, and unites with the Carnic Alps or *Birnbaumer-Wald* of the Germans, a range which, according to M. Bruguière, extends from the source of the Brenta to Villach on the Drave, separating Tyrol and Upper Carinthia from the provinces forming the government of Venice. The chain of the Carnic Alps is prolonged to the south-east under the designation of Julian or Pannonian Alps. This last-named chain separates into two branches a little to the south-east of Tarvis, near the source of the Save. The *Northern Branch* separates the tributary streams of the Save from those of the Drave, stretches through southern Styria, civil Croatia, and entering Sclavonia, disappears in the plains of that province; the *Southern Branch* traverses the kingdom of Illyria, and subdividing into several ridges, terminates in one direction on the west coast of Istria, in another on the coast of the Gulf of Carnero, and farther to the east it is lost in the little eminences which form the point of junction between the Alpine and Slavo-Hellenic systems.

The great chain of the Apennines commences to the east of Savona, at the south-east extremity of the Maritime Alps, and stretches without interruption to the Straits of Messina, beyond which it is prolonged in the mountains of Sicily. It has recently been proposed to divide this chain into four portions — northern, central, southern, and insular. 1. *Northern Apennines.* — This portion of the chain extends from the Col de Tende as far as the valley which leads from Arezzo to St. Angelo — its course is from west to east, leaving to the north the Sardinian provinces of Cuneo and Alessandria, the duchies of Parma and Modena, and the Papal provinces of Bologna, Ravenna, Forli, and Urbin; and to the south, the Sardinian province of Genoa, the duchies of Massa and Lucca, and the grand-duchy of Tuscany. 2. *Central Apennines.* — These extend from the southern extremity of the preceding chain as far as the valley of Pescara, their course being from north-west to south-east, passing through the Pontifical State, where they divide the waters in the basin of the Tiber from those that flow into the Adriatic, and afterwards separate the Neapolitan provinces of Abruzzo Ultra and Abruzzo Citra. 3. *Southern Apennines*, extending from the valley of Pescara to Cape Spartivento; the principal branch of this portion of the chain traverses the kingdom of Naples, separating in its course the waters which flow into the Mediterranean from those which are received by the Adriatic and the Ionian Sea. Mount Vesuvius may be considered a dependency of this range. 4. *Insular* or *Sicilian Apennines*, comprehending the mountains of Sicily. These continue the Apennine chain by three ridges, which setting out in different directions from the neighbourhood of the Pizzo di Case or Mount Modonia, terminate respectively in Cape Rasoculmo on the north-east, Cape San Vito on the north-west, and Cape Passaro on the south.

TABLE OF THE CULMINATING POINTS AND OTHER HEIGHTS IN THE ALPINE SYSTEM.

PRINCIPAL CHAIN,—	*Feet.*
Maritime Alps,—	
Col de Tende, to the S. of Cuneo, N. Lat. 44° 8′, E. Long 7° 30′,	5,889
Col de Roburent, a little to the SE. of Barcelonnette, N. Lat. 44° 24′, E. Long. 7° 6′,	9,718
Town of *Barcelonnette*, in the NE. of the department of the Lower Alps,	3,707
Mines of *St. Ours*, near Barcelonnette,	7,087
Mont Parpaillon, near Barcelonnette,	8,931
Mont de Lans, SE. of Barcelonnette,	4,263
Pass of *Mont de Lans*,	3,862
Col de Maurin, to the SE. of Embrun, in the department of the Upper Alps, N. Lat 44° 30′, E. Long. 6° 47′,	9,784
Village of *Maurin*,	6,240

PRINCIPAL CHAIN,—Maritime Alps (continued)—	Feet.
Peak to the W. of Maurin,	13,107
Monte Polvo, to the S. of Mont Viso, N. Lat. 44° 30′, E. Long. 6° 59′,	9,956
Town of *Gap*, department of the Upper Alps,	2,424
Mont Ventoux, a little to the NE. of Carpentras, department of the Vaucluse,	6,427
Observatory of *Turin*,	915
Cottian Alps,—	
Col dell' Agnello, between the Val Vraita, in Piedmont, and the valley of the Guil, department of the Upper Alps,	10,646
Mont Viso, N. Lat. 44° 40′, E. Long. 7° 5′,	12,586
Mont Olan, to the NE. of the valley of Godemard, N. Lat. 44° 50′,	13,831
Village of *St. Veran*, to the SE. of Fort Queiras, department of the Upper Alps,	6,696
Pic du Chevalier, *Pic de Pelladone*, } W. of Mont Viso,	10,302 / 8,696
Mont Peloux de Valouise, to the SW. of Briançon,	13,440
Town of *Briançon*,	4,285
Mont Genèvre, to the E. of Briançon,	11,785
Pass of Mont Genèvre,	6,476
Mont Galeon de la Grave, near the source of the Romanche, to the N. of Briançon,	12,467
Grecian Alps,—	
Mont Cenis (Rock of St. Michael), N. Lat. 45° 14′, E. Long. 6° 45′,	11,460
Pass of Mont Cenis,	6,775
Lake of Mont Cenis,	6,280
Post-house on Mont Cenis,	6,453
Village of *Lans-le-bourg*, at the foot of Mont Cenis, to the N.,	4,554
Rocca Melone, W. of Mont Cenis, N. Lat. 45° 12′, E. Long. 7° 4′,	11,569
Aiguille de la Sassière, N. Lat. 45° 30′, E. Long. 6° 59′,	12,246
Mont Iseran, source of the Issère, N. Lat. 45° 31′, E. Long. 7° 16′,	13,274
Mont Valaisan,	10,932
Pass of the *Little St. Bernard* (at the Hospice), N. Lat. 45° 43′,	7,192
The *Little St. Bernard*,	9,591
Pennine Alps,—	
Col du Bonhomme, N. Lat. 45° 44′, E. Long. 6° 40′,	8,025
Col de la Seigne, E. of the Col du Bonhomme,	8,078
Mont Blanc (the highest mountain in continental Europe), N. Lat. 45° 50′, E. Long. 6° 52′,	15,730*
Le Géant, a little to the NE. of Mont Blanc,	13 800
Col du Géant,	11,172
Aiguille du Midi, to the N. of Mont Blanc,	12,743
Aiguille du Dru, N. Lat. 45° 57′, E. Long. 6° 49′,	12,445
Aiguille d' Argentière, N. Lat. 45° 56′, E. Long. 6° 58′,	12,163
Dent de Midi, N. Lat. 46° 10′, E. Long. 6° 54′,	10,449
Priory of Chamouni,	3,346
Col de Ferret, E. of the group of Mont Blanc and W. of that of the Great St. Bernard,	7,641
Hospice of the Great St. Bernard,	7,963
Mont Velan (a peak of the *Great St. Bernard*), N. Lat. 45° 53′, E. Long. 7° 15′,	11,063
Mont Combin, N. Lat. 45° 56′, E. Long. 7° 19′,	14,125
Mont Cervin, or *Matterhorn*, to the E. of Mont Combin, E. Long. 7° 43′,	14,837
Pass of Mont Cervin (to the E. of the mountain),	11,105
Monte Rosa, N. Lat. 45° 56′, E. Long. 7° 52′,	15,152
Pic Blanc, on the east flank of Monte Rosa,	11,190
Lepontine Alps,—	
Pass of the *Simplon*, N. Lat. 46° 14′, E. Long. 8° 2′,	6,578
Monte Leon or the *Simplon*, to the N. and E. of the Pass,	11,541
Mont Furka, 10 miles W. of St. Gothard,	14,037
Mont Firuda, in the group of St. Gothard, and to the W. of the Pass,	10,178
Pass of *St. Gothard*, at the Hospice, N. Lat. 46° 35′, E. Long. 8° 32′,	6,808
St. Gothard, *Pesciora*, highest summit in the group,	10,595
St. Gothard, *Pettina*, another summit,	9,152
Moschelhorn, *Vogelsberg*, or *Pix Valrhein*, in the Rheinwald, N. Lat. 46° 29′, E. Long. 9° 2′,	10,870
Monte Cridone, a little to the W. of the northern portion of Lago Maggiore,	7,086
Monte Camoghe, 10 miles N. of Lago di Lugano,	9,315
Monte Giori, a little to the E. of Monte Camoghe,	7,020
Lago Maggiore,	678
Rhætian Alps,—	
Mont Bernardine, or *Bernhardine*, S. of the Rheinwald, N. Lat. 46° 30′, E. Long. 9° 10′,	10,133
Pass of *Bernardino*, on the E. side of the Bernardin,	7,115
Pass of the *Splügen*, N. Lat. 46° 29′, E. Long. 9° 20′,	6,814
Splügen, on the E. side of the Pass,	9,981
Village of *Splügen*, at the N. foot of the mountain,	4,711
Soglio, (the highest village in Europe); in the S. of the Grisons, 8 miles W.S.W. of the Pass of Maloya,	6,714
Pizzo di Stella, to the N. of the village of Splügen,	10,676
Pass of *Maloya*, leading from the Val Bregaglia, to the upper valley of the Inn, N. Lat. 46° 24′, E. Long. 9° 41′,	?
Monte Maloya,	11,483
Mont Septimer, on the N.W. side of the Silser-See, or Sylva-plana Lake, source of the Inn,	9,592
The *Silser-See* (Lake),	5,754
Mont Julier, (*Err* its highest summit), a little to the E. of the Septimer, and N. of the source of the Inn,	13,855?
Pass of *Mont Julier*,	8,134
Monte dell' Oro, S. of the Septimer and Julier, N. Lat. 46° 25′, E. Long. 9° 42′,	10,538
Monte Disorasse or *Della Disgrasie*, a little to the S. of Monte dell' Oro,	12,060

* According to anoth er authority, 15,646 feet.

PRINCIPAL CHAIN,—Rhætian Alps (continued)—

	Feet.
Pizzo d' Ambria, near Sondrio,	9,561
Monte Gavio, 11 miles SE. of Bormio or Worms,	11,754
Monte Confinale, a little to the N. and E. of Monte Gavio,	11,070
Pass, a little to the S. of Nanders, (N. Lat. 46° 54′, E. Long. 10° 32′), in the new Austrian road to Milan, by the Valteline,	4,400
Another pass in the same road, across the ridge of *Monte Stelvio*, a secondary range, a little way down the valley of the Adige; being the highest carriage road in Europe,	9,174
Ortler Spitz, N. Lat. 46° 28′, E. Long. 10° 32′,	12,852
Monte Braulio, 8 miles N. of Bormio,	9,777
Monte Adamello, 10 miles W. of Trent,	11,075
Mont Oetzhaler, about 25 miles NE. of the Ortler-Spitz,	10,434
Mont Gehatsch, (the *Zebru* or *Kœnigs-spitz ?*) to the NW. of the preceding, in the same group,	12,276
Pitzey Kogel, summit in the same group,	10,391
Stuben-Ferner, a little to the NE. of Monts Oetzhaler and Gehatsch,	10,204
Hoch-ider Spitz (*Grosser Bock*), between Mont Stuben and the river Inn,	9,157
Town of *Innsbruck*,	1,857
The *Brenner*, about 20 miles SE. of Innsbruck,	6,788
Pass of the *Brenner*, to the W. of the mountain,	4,660
Laback-Spitz, NW. of Brunecken,	10,128
Town of *Brixen*,	1,955
Drey-Herren Spitz (Peak of the *Three Lords*), N. Lat. 47° 5′, E. Long. 12° 15′,	10,122

Noric Alps,—

The *Great Glockner* (Big Bell), N. Lat. 47° 7′, E. Long. 12° 43′,	12,776
Bad Gastein (Baths), N. of the *Rathausberg*, N. Lat. 47° 5′, E. Long. 13° 6′,	3,137
Höhenwart,	11,075
Wiebach Horn, in the N. of Carinthia,	11,518
Gross Kogel,	9,718
Pass of *Tauerne*, on the high road from Venice to Salzburg, N. Lat. 47° 19′, E. Long. 13° 31′,	5,413
Radstadter Tauerne,	5,588
Höhe Thron, in the Tannen Gebirge (Mount Tanen), 20 miles WSW. from Salzburg,	7,720
Thorstein,	9,630
Kappenkarstein, in Upper Austria,	8,075
Kalmberg,	5,924
Winfeld Peaks,	8,581
Höhe Gailing or *Golling*, in Styria and Lower Austria,	6,203
Schneeberg,	6,960
Pass of *Semmering*, 20 miles NE. of Bruck,	3,225
Culminating point of the Bakonier Wald, N. of Veszprim,	2,378

NORTHERN CHAIN, or BERNESE ALPS,—

Chain between the Valais and Berne,—

Pass of the *Grimsel*, N. Lat. 46° 33′, E. Long. 8° 20′,	8,400
Grimselberg,	9,702
Finster-Aar-Horn (Dark Peak of the Aar), 11 miles W. of Grimsel Pass,	14,106
Schrekhorn, 5 miles N. of Finster-Aar-Horn,	13,386
Wetterhorn, 5 miles N. of the Schrekhorn,	12,210
Grindelwalder-Verscher-Horner, NW. of Finster-Aar-Horn, E. Long. 8° 3′,	13,221
Eiger, 5 miles W. of the Schrekhorn,	13,075
Le Moench (Monk), between Mont Eiger and the Jung Frau,	13,498
Jung Frau (Virgin), N. Lat. 46° 32′, E. Long. 7° 57′,	13,718
Tschingelhorn, SW. of the Jung Frau, N. Lat. 46° 29′, E. Long. 7° 50′,	11,700
Gespallenehorn, N. Lat. 46° 30′, E. Long. 7° 48′,	11,588
Blumlis-Alpe, or Wilde Frau, N. Lat. 46° 29′, E. Long. 7° 45′,	12,140
Zakhorn, N. Lat. 46° 27′, E. Long. 7° 46′,	12,150
Doldenhorn, N. Lat. 46° 28′, E. Long. 7° 44′,	12,021
Balme-Horn, N. Lat. 46° 26′, E. Long. 7° 43′,	12,176
Alte-els Horn, N. Lat. 46° 24′, E. Long. 7° 42′,	12,182
Rinderhorn, N. Lat. 46° 26′, E. Long. 7° 39′,	11,680
Lammernhorn, N. Lat. 46° 23′, E. Long. 7° 34′,	9,994
Stroubel, N. Lat. 46° 23′, E. Long. 7° 30′,	10,978
Road over the ridge of the *Gemmi* or *Daube*, S. of Alte-els Horn and Stroubel,	6,985
Oldenhorn, at the SW. point of the Canton of Berne, N. Lat. 46° 20′, E. Long. 7° 13′,	10,191
Les Diablerets, between the Valais and the Canton of Berne, N. Lat. 46° 18′, E. Long. 7° 11′,	10,620
Dent de Morcle, N. Lat. 46° 12′, E. Long. 7° 5′,	9,758
Mont Pelerin, or *Dent de Jaman* (culminating point of the Jorat), on the borders of the Canton of Fribourg, to the E. of Vevey,	4,085
Highest point of the route from Lausanne to Berne,	3,038
Lake of *Geneva*,*	1,152
Lake of *Thun*,	1,896
Lake of *Brienz*,	1,900
Niesen (*Mont*), S. of the Lake of Thun, at the opening of the valleys of Simmen and Kander,	7,340
Stockhorn, to the W. of the Niesen,	6,760

Chain extending from the Group of St. Gothard to the Lake of Lucerne,—

Gallenstock, N. of Furka Pass, N. Lat. 46° 37′, E. Long. 8° 25′,	12,481
Glacier in which the *Rhône* has its source, on the S. flank of the Gallenstock, and W. of Mont Furka,	5,469
Süstenhorn, 5 miles NNE. of the Gallenstock,	11,627
Spitzli, summit in the same group,	11,387
Steinenberg, N. Lat. 46° 44′, E. Long. 8° 26′,	9,892
Titlis, 11 miles NNE. of the Gallenstock,	11,414
Schlossberg, N. Lat. 46° 48′, E. Long. 8° 33′,	10,407
Wallenstock, 6 miles NW. of Mont Titlis,	8,611
Urner-Rothstock, 6 miles W. of Altorf,	9,300

* Greatest depth of the Lake, 906 feet.

NORTHERN CHAIN, or BERNESE ALPS,—

	Feet.
Chain extending from the Group of St. Gothard to the Lake of Lucerne (continued.)	
Wendi, or *Gadmerstock*, near the lake of *Engstlen*,	10,122
Schæn Alpe, *Bloum Alpe*, or *Stanzerhorn*, S. of Stans, Unterwalden,	6,517
Pilate, 8 miles SW. of Lucerne,	7,080
Lake of *Lucerne*,	1,406
Hochgant, 8 miles NNE. of Untersen,	7,257
Chain or Series of Ridges extending from the Group of St. Gothard to the Lakes of Constance and Zurich,—	
Trithorn, NE. of St. Gothard,	9,752
Ober-Alpstock, 6 miles NE. of Andermatt, canton of Uri,	10,916
Crispalt, 10 miles NE. of Andermatt,	6,874
Bristenstock, or the *Stégherberg*, a little to the NW. of Crispalt,	8,046
Dödi, *Toedi*, *Pix Russein*, or *Pix-Krap-Klarand*, in the SW. of the canton of Glaris, N. Lat. 46° 48′, E. Long. 48° 52′,	11,766
Windghelli, a little to the W. of the Dödi,	9,339
Scheerhorn, a little to the N. of the Dödi,	10,865
Hausstock,	9,453
Höhe-Kirsten, } E. of the Dödi, on the frontier of the Glaris and the Grisons, {	10,563
Martschenstock,	10,216
Scheibe, in the SE. of the canton of Glaris,	9,986
Kuhfirsten, or *Sieben-Kuhfirsten*, seven peaks of the *Sichelkamm* and *Ochsenkamm*, N. of the lake and town of Wallenstadt,	7,407
Sentis, or *Hoch-Sentis*, in the SW. of the canton of Appenzell,	8,268
Lake of Constance,*	1,305
Glarnisch, on the S. side of the lake of Glaris,	9,510
Righi, or *Righiberg*, between the lakes of Lucerne and Zug,	5,676
Rossi, *Rossberg*, or *Rotzberg*, on the SE. bank of the lake of Zug,	4,936
Lake of *Zug*,	1,405
Mount Zurich, near Zurich,	2,346
Lake of *Zurich*,	1,363

JURA CHAIN,—

Le Recullet (summit of *Mont Thoiry*), two miles SW. of Gex, in the NE. of the department of the Ain,	5,627
La Dôle, eight miles NW. of Nion, canton of Vaud,	5,511
Mont Tendre, on the E. side of the lake of Joux,	5,541
Mont Landoz, on the French frontier, to the W. of the lake of Joux,	4,680
Lac de Joux,	3,259
Source of the *Doubs*, near Mouth, in the SE. of the department of Doubs,	3,045
Mont d'Or, eleven miles S. of Pontarlier, department of the Doubs,	4,797
Mont Suchet, on the French frontier, to the W. of Yverdun, canton of Vaud,	5,148
Mont Chasseron, NNE. of the Suchet, on the borders of Vaud and Neufchâtel,	5,289
Lake of *Neufchâtel*,†	1,437
Le Cabaret de Cernil, in the SW. of the canton of Neufchâtel,	3,881
Mont de Chateleu, on the French frontier, to the W. of the town of Neufchâtel,	4,232
La Chasserale, seven miles E. of Biel, canton of Berne,	5,304
Weissenstein, N. of Soleure, in the canton of that name,	4,770
Mont Terrible, or *Jules Cesar*, to the N. of the eastern bend of the Doubs, in the NW. of Berne,	2,600
City of Basle,	827

VORARLBERG CHAIN,—

Scaletta, in the Grisons, 28 miles NE. of Monte Oro,	8,864
Seesa-Plana Prættigau, on the frontier of the Vorarlberg, W. of Mayenfield, in the N. of the Grisons,	9,812
Falknisz, 8 miles NE. of Mayenfield,	8,100
Summit of the *Arlbergs* (Eagle Mountains), N. of the village of Arlberg, in the Vorarlberg,	9,200
Solstein, facing Innsbruck, to the N.	9,705
Almenspitz,	8,618
Watzmann, near Königsee, } to the N. of the Inn, {	9,654
Breithorn,	7,771

CARNIC ALPS,—

Monte Novegno, source of the western feeders of the Brenta,	6,580
Col de Campanazza,	8,524
Cima d'Asta, source of the Brenta, N. Lat. 46° 18′, E. Long. 11° 32′,	9,198
La Marmolata, source of the western branch of the Piave, N. Lat. 46° 26′, E. Long. 11° 55′,	11,508
Monte Mauro, or *Marero*, 18 miles NE. of Belluno,	5,038
Source of the *Tagliamento*, on the N. of Monte Mauro,	4,413
Monte Scuro, N. Lat. 46° 40′, E. Long. 12° 27′,	7,456
Source of the *Piave*, 14 miles E. of Monte Scuro,	4,245
Monte Croce, N. Lat. 46° 35′, E. Long. 13° 2′,	5,433
Le Grand Nabois, S. of Pontebe, in the NE. of Lombardy,	9,593
Mont Schlern,	8,045
Schwartzhorn,	8,058
Town of *Villach*, in Carinthia,	2,430

JULIAN ALPS,—

Northern Branch,—

Prediel, S. of Tarvis,	3,832
Terglou, source of the Save and the Isonzo, N. Lat. 46° 22′, E. Long. 13° 51′,	10,866
Source of the *Save*,	2,630
Keppas or *Mittags-Kogel*, 10 miles NNE. of the Terglou,	6,887
Weleki-Stal, a little to the SE. of the Keppas,	7,230
Pass of *Leobel*, S. of Klagenfurt in Carinthia,	4,298
Owir or *Leobel-berg*, to the E. of Leobel Pass, and 15 miles SE. of Klagenfurt,	7,173
Garic, 30 miles NE. of Petrinia, in Craotia,	2,490
Papuk, 60 miles E. of Petrinia, and 17 miles SE. of Posega,	2,493

* Greatest depth of the Lake, 2,151 feet. † Greatest depth of the Lake, 1,437 feet.

	Feet.
JULIAN ALPS,—Southern Branch,—	
Karst, N. of Trieste,	1,582
Snimick or *Schneeberg*, 40 miles E. of Trieste, and 13 miles E. of Lake Zirknitz,	7,457
Monte Maggiore, 12 miles SW. of Fiume, on the opposite side of the Gulf of Quarnero,	4,569
APENNINES,—	
Northern Apennines,—	
Passes of *Nava*, *Mantariola*, and *Borghetto*, to the E. of the Col de Tende (see *Maritime Alps*),—average height,	3,066
Pass of the *Rocca Barbena*, N. Lat. 44° 9′, E. Long. 8° 6′,	2,953
Pass of the *Monte Calvo* or *Calyo*, 10 miles W. of Finale,	2,920
Col de Melogno, N. Lat. 44° 14′, E. Long. 8° 12′,	3,445
Col de St. Jacques, or *San Giacomo*, E. of the preceding, and 10 miles W. of the town of Vado,	2,625
Pass of the *Bocchetta*, 13 miles NW. of Genoa,	2,550
Colmo de Secco or *Bocchetta*,	3,491
Pass of *Montenotte*, leading from Acqui to Savona,	4,460
Pass of *Giovi*, leading from Genoa to Novi,	1,550
Monte de San Pellegrino, N. Lat. 44° 12′, E. Long. 10° 29′,	5,158
Bosco Lungo, N. Lat. 44° 8′, E. Long. 10° 40′,	4,452
Convento di Vernio,	4,170
Col di Pietra Mala, leading from Bologna by Lojano to Florence,	3,294
Petrella,	3,301
Radicofani, volcanic mountain on the S. border of Tuscany, in the highroad between Sienna and Rome,	3,060
Monte Amiata, volcanic mountain W. of Radicofani,	5,794
Monte Soriano, E. of Viterbo,	4,183
Monte Cimone, between the Modenese and Tuscan territories, N. Lat. 44° 13′, E. Long. 10° 41′,	6,975
Pizzo d' Uccello,	Summits of the *Alpi Appuani*, which contain the marble quarries of Carrara, W. of Monte Cimone, 6,147
Monte Sacro, above Carrara,	5,540
Panie della Croce,	6,102
Central Apennines,—	
Monte Catria, E. of Cantiano, Papal States, N. Lat. 43° 27′, E. Long. 12° 44′,	5,551
Monte Pennino, NE. of Foligno, Papal States, N. Lat. 43° 6′, E. Long. 12° 52′,	5,167
Monte Sibilla, N. Lat. 42° 53′, E. Long. 13° 14′,	7,212
Monte Vetora, N. Lat. 42° 49′, E. Long. 13° 10′,	8,135
Terminillo Grande, near Civita Ducale, Upper Abruzze,	7,034
Terminillo Picolo,	6,206
Monte Corno, summit of *Il Gran Sasso d' Italia* (highest point of the Apennines), ENE. of Aquila, N. Lat. 42° 27′, E. Long. 13° 36′,	9,521
Monte Velino, N. of Lake Celano, N. Lat. 42° 11′, E. Long. 13° 6′,	8,183
Pass leading from Aquila to Avezzano,	4,570
Monte St. Oreste (Mons Soracte), 26 miles N. of Rome,	2,140
Rocca di Mezzo, N. Lat. 41° 57′, E. Long. 12° 57′,	4,259
Town of *Tivoli*,	774
Rome (the Capitol),	160
Monte Cavo, 12 miles E. of Albano, in the Campagna,	4,186
Monte Cacume, Campagna, N. Lat. 41° 37′, E. Long. 13° 9′,	3,008
Monte Schiera d' Asino,	W. of the valley of the Tolero, and SE. of Albano, 4,878
Monte Capreo,	4,816
Southern Apennines,—	
Monte Amaro, summit of *Monte Majella*, SW. of Lanciano, Lower Abruzzo,	9,131
Monte Miletto, E. of Venafro and N. of Capua,	6,744
Monte Calvo, summit of the *Gargano Mountains*, in the NE. of the Capitanata, N. Lat. 41° 45′, E. Long. 16° 8′,	5,295
Vesuvius (*Monte Vesuvio*), 10 miles E. of Naples, N. Lat. 40° 49′, E. Long. 12° 47′,	3,932
Monte Epomeo, island of Ischia,	2,513
Monte St. Angelo di Castellamare, on the S. side of the Gulf of Naples,	4,688
Monte Salaro, island of Capri,	3,195
Monte Sivino, province of Basilicata,	6,000
Monte Pollino, or *Il Pollino*, on the S. frontier of Basilicata,	7,076
La Sila, E. of Cosenza, Calabria-Citra,	4,935
Pass near Nicastro, Calabria Ultra,	3,458
Monte Alto, highest summit of *Monte Aspro*, E. of the Strait of Messina,	4,380
Insular or Sicilian Appenines,—	
Pizzo di Case, summit of *Monte Modonia*, S. of Cefalu and W. of Nicosia,	6,509
Cozzo di Mafera, near Polizza,	6,247
Portella dell' Arena,	5,147
Piana di Froglio,	4,964
Monte Cuccio, near Palermo,	3,216
Ætna, or *Monte Gibello*, Summit,	10,871
Grotto of the Goats,	5,345
Great Glacier,	7,412
Philosopher's Tower,	9,482
La Maison Anglaise,	9,587
Foot of the Cone,	9,790
Volcano of *Stromboli*, Lipari Islands,	2,687

SLAVO-HELLENIC SYSTEM; or EASTERN ALPS.—This great assemblage of mountains may be said to commence in the uplands of Military Croatia, which, according to many geographers, unite the principal chain of this system with the Julian branch of the Western Alps. The chain that we consider to be the principal, and to which we shall apply the term Northern, in order to give it a general denomination, borrowed from its position in reference to other chains detached from it, sets out from the uplands to which we have already adverted, and proceeding first in a south-easterly direction, then bending to the east, takes the names of Dinaric Alps as it traverses Military Croatia and Dalmatia; Nissava Gora and Glubotin between Bosnia on the north, and Herzgovina, Montenegro, and Upper Albania on the south; Tchar-Dag (Scardus) and Argentaro or Egrisou-Dag (Orbelus), between Servia on the north, and Macedonia on the south; and Doubnitza

(Scomius), and Balkan or Emineh-Dag (Hæmus) between Bulgaria and Roumelia, as far as the coast of the Black Sea, where the range terminates.

At three several points of the principal chain other chains are detached, which may be considered of a secondary character, notwithstanding the great elevation of some of their summits. The most western of these we shall name the Southern or Hellenic Chain, as it includes in its different branches nearly all the mountains of the Grecian Peninsula, properly so named. It commences a little to the east of the town of Prisrend in Upper Albania, and due east of the Tchar-dag. It separates Albania from ancient Macedonia, by the ridges of *Candavia*, *Grammos*, *Samarina*, and *Mavrovoros*, or the *Black Mountains*, and terminates in the *Greater Mezzovo* or *Smokobo Mountains* (Pindus), between ancient Thessalia and Epirus, of which the ridge extending into the Morea may properly be deemed a continuation. The ridge of Olympus, now called the *Volutzo Mountains*, between Macedonia and Thessalia, that of Mount Othrys, a little to the north of the river Hellada or Sperchius, and that of Mount Œta, terminating near the Pass of Thermopylæ, are detached from this chain, and stretch eastward towards the Ægean Sea. To the west of Pindus, the *Agrafa Mountains*, consisting of the ridges of *Trumerka*, and *Macrinoros*, or the *Long Mountain*, divide the valley of the Aracthus, or Arta River, from that of the Aspropotamo, the ancient Achelous; and farther to the north-west, the *Khimera Mountains* (anciently the *Acroceraunian*) skirt Albania from Cape Linguetta in the north-west, to the Lake of Butrinto in the south-east.

From another central point, a few miles to the east of Ghuistendil and Doubnitza, several ranges are detached in different directions. One of these, the Pounhar-Dag (Pangæus), runs south into Eastern Macedonia. *Monte Santo* (Athos) may be considered an appendage of this range. Another range called the Despoti-Dag (the ancient Rhodope), proceeds south-east, separating ancient Macedonia from ancient Thrace. An elevated plain, through which the Maritza (Hebrus) flows, connects its base with that of Hæmus. A third ridge, which runs north under several names, the principal of which is Planina, skirts Servia on the east, and reaching the Danube near Orsova, joins a branch of the Hercynio-Carpathian system.

From a point near Selimno, two chains are detached from the main ridge, one of which extends into eastern Balgaria, where it forms numerous defiles, in the middle of which Shumla is built. The other chain, a portion of which is called the *Stanches Mountains*, bends to the south-east, and forms the range of *Strandschea* or *Strandjia*, separating the inland plateau of Thrace from the Black Sea. It afterwards divides into two branches, one of which proceeds eastward to the Strait of Constantinople; the other, called the *Tekiri-Dag* (the ancient Ganos), stretches to the western extremity of the Strait of the Dardanelles.

The mountains of Candia, those in the islands of the Archipelago, and also the mountains of the Ionian Isles, may be considered geographical dependencies of this system.

TABLE OF THE CULMINATING POINTS AND OTHER HEIGHTS IN THE SLAVO-HELLENIC SYSTEM.

	Feet.
NORTHERN CHAIN,—	
Dinaric Alps,—	
Mount Kleck, 26 miles SW. of Carlstadt, and a little to the N. of Mount Kapella,	6,926
Mount Kapella, N. Lat. 45° 4′, E. Long. 15° 15′,	3,117
Mount Plisivitza, 34 miles due E. of Segna or Zengh,	5,742
Mount Dinara, N. Lat. 44° 7′, E. Long. 16° 23′,	7,456
Dinarisze Planini,	5,971
Mount Prologhi, 25 miles SE. of Mount Dinara,	4,475
Mount Biocavo, near Macaraka in Dalmatia,	5,301
Balkan, &c.	
Tchar-Dag,	10,000
Egrisou-Dag (Orbelus), in the Argentaro ridge,	8,000
Doubnitza (Scomius),	9 000
Emineh-Dag (Hæmus), in general from	6,500 to 7,500
SECONDARY CHAINS,—	
Southern or Hellenic Chain,—	
Culminating Points of the *Mezzovo* ridge,	9,000
Culminating Points of the *Candavian Mountains*,	7,000
Ridge of the *Albanian Chain* in general,	7,673
Volutzo Mountains in general,	7,000
Mount Pierus, E. of the Indge Karasou (River Haliacmon), N. Lat. 40° 15′, E. Long. 22° 14′,	*6,161
Mount Lacha (Olympus), 30 miles N. of Ienitchere or Larissa, N. Lat. 40° 5′, E. Long. 22° 21′,	*9,754
Mount Kissovo (Ossa), 18 miles NE. of Larissa, N. Lat. 39° 48′, E. Long. 22° 42′,	*6,407
Mount Zagora (Pelion), on the NE. of the Gulf of Volo, about 45 miles SE. of Larissa, N. Lat. 39° 27′, E. Long. 23° 3′,	*5,310
Mount Itamo, N. Lat. 39° 10′, E. Long. 21° 48′, } in the chain of Pindus,	5,789
Mount Veluchi, N. Lat. 38° 52′, E. Long. 21° 49′, } in the chain of Pindus,	7,657
Janitzou, N. Lat. 39° 1′, E. Long. 22° 5′,	3,431
Megalo Isoma, N. Lat. 39° 1, E. Long. 22° 13′,	3,045
Andinitza, N. Lat. 39°, E. Long. 22° 25′,	4,392
Jeracovouni, N. Lat. 39° 1′, E. Long. 22° 43′, } in the ridge of Othrys,	5,669
Khlomo, N. Lat. 39° 5′, E. Long. 22° 56′,	2,950
Tragovouni, N. Lat. 38° 59′, E. Long. 23°,	2,106
Goullena, N. Lat. 38° 51′, E. Long. 22° 4′, } in the ridge of Œta,	4,862
Katavothron, N. Lat. 38° 49′, E. Long. 22° 17′, } in the ridge of Œta,	7,071
Bugikaki, N. Lat. 39° 15′, E. Long. 21° 40′,	7,750
Zurmentzallo, N. Lat. 39° 13′, E. Long. 21° 25′,	3,625
Gabrovo, N. Lat. 39° 8′, E. Long. 21° 20′,	6,479
Chelona, N. Lat. 39° 7′, E. Long. 21° 17′,	6,312
Stano, N. Lat. 39° 7′, E. Long. 21° 35′, } in the ridge of Agrafa,	5,538
Carries, N. Lat. 38° 58′, E. Long. 21° 25′,	5,764
Sycharitza, N. Lat. 39° 1′, E. Long. 21° 21′,	5,908
Langadia, summit of Macrinoros Mounts, N. Lat. 39° 2′, E. Long. 21° 12′,	1,433

* Nearly the whole of the heights in this system, as stated in the Table, are either approximate or conjectural. Among the exceptions are a few in the list of the Hellenic Mountains, which were determined trigonometrically during the late survey of the shores of Greece by Captain Copeland, R.N., and which are indicated in the Table by prefixed asterisks.

	Feet.
SECONDARY CHAINS,—(continued)—	
Kastri, E. of the gulf of Arta,	1,565
Anyadero, on the E. of Vonitza,	1,421
Mount Liacoura (Parnassus), 35 miles ENE. of Nepakto or Lepanto,	5,755
Mount Zagora (Helicon), N. of the Bay of Liva-Dostro, and 10 miles SW. of Lake Topolias,	4,500
Mount Citheron, 10 miles E. of the Bay of Liva-Dostro,	4 156
Mount Pentelicus, 15 miles NE. of Athens,	3,500
Mount Trelovouno (Hymettus), a little to the SE. of Athens,	2,877
Mount Cyllene (in ancient Arcadia), Morea,	7,743
Mount Pentadactylon or *St. Elias* (Taygetus), a ridge ranging from 40 to 55 miles due N. of Cape Matapan, according to { Balbi, 7,929; Another authority,† 6,115	
Culminating Point of the *Khimera* ridge (Acroceraunian Mountains), the northern termination of which is Cape Linguetta, on the W. of the Gulf of Avlona,	5,115
Chain W. of Ioannina (*Chamouri Mountains*), in general	7,673
Mount Tomarus, 27 miles due W. of Ioannina,	6,400
Insular Summits,—	
Corfu,	1,900
Santa-Maura,	1,300
Thiaka or Ithaca,	1,300
Black Mountain, Kephalonia,	5,356
Zante,	1,300
Eastern Chains,—	
Culminating Points of the *Pounkar-Dag* (Pangæus), to the W. of the Mesto or Karasou River,	5,900
Mount Menikion (Cercine), 60 miles N. of Saloniki,	6,395
Khortiatza, 12 miles SE. of Saloniki,	*3,894
Kholomon, 19 miles SE. of Saloniki,	*3,430
Mountain above Capsokhori, SE. of Lake Ienidja,	3,837
Mountain above Panomi, on the E. of the Gulf of Saloniki,	4,476
Mount Athos, the *Agion-oros* (Holy Hill) of the modern Greeks, and *Monte Santo* of the Franks, N. Lat. 40° 10′, E. Long. 24° 20′,	*6,349
Xanthe, in Gallipoli, N. Lat. 41° 9′, E. Long. 24° 47′,	*3,815
Pilav-Tepeh (Pirnari), NE. of Orphano, N. Lat. 40° 53′, E. Long. 24° 6′,	*6,143
Insular Summits,—	
Mount Ipsario, N. Lat. 40° 42′, E. Long. 24° 43′, } Thaso,	*3,428
Mount St. Elias, N. Lat. 40° 43′, E. Long. 24° 40′, } Thaso,	*3,274
Mount Fengari, Samothraki, N. Lat. 40° 27′, E. Long. 25° 37′,	*5,248
Mount Delphi, Skopelo,	2,295
Mount Lithada, in the NW. of Negropont,	2,222
Mount Delphi, Negropont, 16 miles W. of Cape Kili,	4,156
Mount Cocyla, Syra,	2,589
Mount Jupiter, Naxia,	3,300
Mount St. Elias, Paros,	2 525
Mount St. Elias, Milo,	2,357
Mount Psiloriti (Ida), Candia, 20 miles N. of Cape Matala,	7,901

HERCYNIO-CARPATHIAN SYSTEM.—This system includes all the mountains and eminences comprehended between the Rhine, Dnieper, and Danube, the plains of northern Germany and those of western Poland. Among the numerous chains thus presented to us, we propose to consider the Carpathians and the Sudetic and Hercynian Mountains as one continuous chain, although these three groups are at different points separated by wide intervals. Looking on this range as the principal chain of the system, we shall name it the *Hercynio-Carpathian*, and restrict the denomination of *Hercynian Mountains* to the eminences which, stretching across an elevated country, frequently furrowed by deep valleys, connect, by means of the ridge of Rauhe-Alb, (or, as it is sometimes improperly named, the Swabian Alps), the extremity of the Erze-Gebirge with the mountains of the Swartz-Wald (Black Forest), or the *Sylva Hercynia* of the ancient geographers. Besides being already consecrated by usage, although in a less extended acceptation, these two combined denominations possess the additional advantage of recalling to the memory the names by which the two extreme portions of the protracted series of heights, which we regard as the principal chain, are designated. If a reason must be assigned to justify the preference given to this series over all the other chains in the system, the superior elevation of its summits may readily be adduced.

The Carpathians or Krapack Mountains, the extreme eastern portion of which formed a part of the *Bastarnian* or *Dacian Alps* of the ancients, may be said to commence a little to the eastward of Kronstadt, in the south-east of Transylvania, and stretching in a north and north-west direction, they separate Moldavia and Gallicia from Transylvania and Hungary, and terminate near the source of the Oder, in the north-west of the latter country. The Carpathians, especially the western series, do not form a regular chain, but rather a high table-land or plateau, sprinkled with isolated groups and small chains. The most elevated of these groups in the Western Carpathians is that of *Tatra*, which extends from east to west between the Poprad and Dunajec rivers on the east and north, and the Waag and Arva on the south and west.

The *Gresenker-Gebirge* (Lower Mountains), between Silesia and Moravia, a very elevated plateau, surmounted by several eminences, unites the Western Carpathians with the prolonged range, named the Sudetic Mountains, which commences to the north-east of the sources of the Elbe, on the confines of Bohemia, Moravia, and Silesia, and separates Bohemia from Silesia, Lusatia, and Saxony, under the names of *Mountains of Glatz*, in the county of that name; *Riesen-Gebirge* (Giants' Mountains), from Trautenau and Friedland to the south of the town of Hirschberg: *Iser-Gebirge*, or *Iser-Kamm* (Crest of the Iser), from the north-west of Hirschberg to Marklissa in Lusatia; *Wohlische-Kamm*, on the south-west of the Iser-Kamm, and *Erzgebirge* (Metallic Mountains), from the west of the Elbe to the sources of the Mulda and Elster, in the south-west of Saxony. The *Fichtel-Gebirge*, in the Bavarian circle of the Upper Mein; and the plateau and elevated hills of the *Seiger-Wald*, in the circles of the Lower Mein and Rezat, connect the western extremity of the Erzgebirge with the chain of the *Rauhe-Alps* in Wirtemberg, which commencing at Konigsbron, near the source of the Brentz, winds along the basin of the Upper Danube, and in the neighbourhood of Ebingen unites with the heights of the

† Felix Beaujour. See "*Orographie de l'Europe*," in the third volume of the "*Recueil des Voyages et des Mémoires*," published by the Geographical Society of Paris.

Swartz-Wald (Black Forest), the latter of which, partly in Wirtemberg, and partly in the Grand-Duchy of Baden, run parallel to the course of the Rhine, as far as Bâle in Switzerland.

Among the numerous mountain chains which are detached from the principal chain, we shall confine our notice to the most important, commencing with those in the east and proceeding westward.

To the south-east of Kronstadt in Transylvania, a ridge called the *Piatra-Teplino Mountains*, formerly the *Bastarnian* or *Dacian Alps*, is detached from the eastern extremity of the Carpathians, and extends in a direction first to the west, then south as far as Orsova on the Danube, separating Transylvania from Walachia. It is very elevated, but the height of its summits is not exactly known. Beyond the Danube it is continued in a range of no great elevation, detached from the Balkan, and forming the connecting link between the Hercynio-Carpathian System and that of the Slavo-Hellenic Alps.

The numerous and elevated mountains of Transylvania, the Bannat, the Bukowine, Upper Hungary and Gallicia, as well as the inconsiderable heights which diversify the plains of the latter country, and those of the Russian governments of Podolia, Volhynia, &c. are all dependencies of the Carpathians.

From a point about 20 miles due south of Mount Krivan in the Tatra group, a detached range the northern portion of which is separated from the principal chain by the south-eastern portion of the Upper Waag, stretches first west, then bending south towards the Danube, is separated by the course of that river from the Bakonier-Wald in the Alpine system; its northern summits are named the *Königsberg Mountains*. To the west of the northern sources of the Waag, two groups, separated from each other by the defile of Jablunka, form the natural boundary between Hungary, Eastern Gallicia, and Moravia; one of these, called the *Baszkid*, is situate between the Arva, Waag, Kissucza, and the sources of the Vistula; the other extends south-west from the Kissucza to Presburg, under the general name of *Ivornik*, its southern portion being also called *Kleine Karpathen Mountain*.

To the south of the mountains of Glatz, (the southern portion of which are denominated *Eulen-Gebirge* or *Owl Mountains*), a short chain called *Zydarsky Hory*, or *Mohrische-Gebirge* (Moravian Mountains), runs south-south-west, separating Moravia from Bohemia. Westward of that chain, the *Mittel-Gebirge* (Central Mountains), a basaltic range in the interior of Bohemia or basin of the Upper Elbe, follows the course of the Eyca.

We have already remarked that the heights of the Swartz-Wald, at the western extremity of the Hercynio-Carpathian chain, approach the sub-Alpine chain of the Jura near Bâle, and we may further observe that the other numerous groups and ranges of the *Hercynian Mountains*, which may be regarded as of a secondary character, or detached from the principal chain, are in like manner not only connecting links between the Hercynio-Carpathian and Alpine systems, but also by their extension to the north-west, unite these two great systems of central and southern Europe with the Gallo-Francian system on the west. The most considerable of these ranges is the chain of the *Bochmer-Wald* (Bohemian Forest), which commencing to the south-east of the Franconian *Fichtel-Gebirge* (Pine Mountains), in the north-east of Bavaria, at the western termination of the Erze-Gebirge, separates Bavaria from Bohemia, and stretches eastward into the Arch-Duchy of Austria. At its termination to the north of Linz, it is separated only by the bed of the Danube from the range detached from the Noric Alps, which stretches to the north-east of Salzburg. To the west and north of the Fichtel-Gebirge are a series of groups, forming broken ranges, extending generally towards the Rhine. The most important of these are the *Franken-Wald* (Franconian Forest), in the Bavarian circle of the Upper Mein; the *Thuringer-Wald* (Forest of Thuringia), in the Saxe-duchies, part of the electorate of Hesse-Cassel, principality of Schwartzburg-Rudolstadt, &c. &c.; the *Eichsfeld-Gebirge* (Oak Hills range) with its western branches, in the Prussian government of Erfurt, and in the electorate of Hesse; the *Meisner*, in the electorate of Hesse; the *Harz*, in the south of the kingdom of Hanover, in the duchy of Brunswick, and in the Prussian government of Merseberg; the *Rhoen-Gebirge*, or *Höhe Rhoen*, in the Bavarian circle of the Lower Mein; the *Vogelsberg* (Bird Mountains), in the Hessian provinces of Giessen and Fulda; the *Spessart* or *Spesshardt*, in the Bavarian circle of the Lower Mein; the *Oden-Wald*, a volcanic group in the south-east of Hesse-Darmstadt; the *Taussen-Gebirge* or *Die-Höhe* (the ancient Taunus), in the south of the duchy of Nassau; and the *Wester-Wald*, in the Prussian governments of Coblentz and Arensberg. With reference to the two last-named groups, it may be remarked, that the narrow valley of the Rhine, at a point near Bingen, separates the Taussen from the Hundsruck, a group in the Gallo-Francian system, and again in the neighbourhood of Andernach, separates the Westerwald from the Eifel-Gebirge, which also belongs to the same system, (see preceding page 145). Lastly comes the *Egge*, in the Prussian government of Minden and Hanoverian principality of Osnabruck; in the former of which, and connected with these hills, is situate the narrow passage called the *Porta Westphalica*, opened up by the river Weser in forming its bed; and farther north, several heights, which may be named the *Danish Group*, and regarded as northern outliers of this system, are found in continental Denmark and the neighbouring islands.

CULMINATING POINTS AND OTHER HEIGHTS IN THE HERCYNIO-CARPATHIAN SYSTEM.

HERCYNIO-CARPATHIAN CHAIN,—

	Feet.
Carpathians (properly so called), Krapacks, or *Western Carpathians*,—	
Budos-Hegy (*Budislaw?*), 40 miles NNE. of Kronstadt, Transylvania,	7,340
Sninzky Kamau, 47 miles ENE. of Kaschau in Hungary, N. Lat. 48° 52', W. Long. 22° 16',	3,535
Summits in the *Tatra* group, *Peak of Lomnitz*, N. Lat. 49° 2', E. Long. 20° 16',	8,465
Summits in the *Tatra* group, *Kriwan*, N. Lat. 49° 8', E. Long. 20° 12',	8,031
Summits in the *Tatra* group, *Grunesee-Spitze*,	8,206
Summits in the *Tatra* group, *Eisthaler-Spitze*,	8,534
Summits in the *Tatra* group, *Czabi*, N. Lat. 49° 5', E. Long. 20° 6',	8,314
Summits in the *Tatra* group, *Viszoka*,	8,314
Range of the Gesenker-Gebirge,—	
Source of the *Oder*,	1,086
Lissa-Hora, near Teschen,	4,546
Kamm-Koppel,	4,265
Mittelberg,	3,908
Schneeberg, on the confines of Silesia, Moravia, and Bohemia, N. Lat. 50° 8', E. Long. 16° 45',	4,784
Sudetic Mountains or Sudetes,—	
Source of the *Elbe*,	4,425
Schneekoppe, or *Riesenkoppe* (in the *Riesen-Gebirge*), the highest point of Germany north of the Danube, N. Lat. 50° 44', E. Long. 15° 45',	5,274
in the *Riesen-Gebirge*, *Borenberg*,	5,020
in the *Riesen-Gebirge*, *Great Rad*,	5,020
in the *Riesen-Gebirge*, *Great Sturmhaube*,	4,885

	Feet.
HERCYNIO-CARPATHIAN CHAIN,—Sudetic Mountains or Sudetes (continued),—	
Kesselberg, }	4,656
Lahnberg, }	4,807
Schwartz-Koppe, } in the *Riesen-Gebirge*,	4,583
Grubenrander, }	4,738
Iser-Kamm, in the *Iser-Gebirge*, culminating point,	4,156
Walter-Dorfer-Spitz, culminating point of the *Wohlische-Kamm*,	2,563
The river *Elbe*, at Dresden,	280
Schneeberg (near Fetschen), N. Lat. 50° 47′, E. Long. 14° 6′, }	2,089
Beerhübel, N. Lat. 50° 34′, E. Long. 13° 23′, } in the *Erzs-Gebirge*,	2,857
Sonnenwirbel (*Keilberg?*), culminating point of the *Joachimthal Mountains*, N. Lat. 50° 25′, E. Long. 12° 58′, }	4,124
Schneckenstein, near the source of the Mulda,	3,060
Hercynian Mountains,— (portion in the Principal Chain),—	
Fichtel-Gebirge,—	
Schneeberg (sources of the Mayne and the Eger), N. Lat. 50° 3′, E. Long. 11° 51′,	3,461
Ochsenkopf (between the sources of the Mayne and the Naab), N. Lat. 50° 1′, E. Long. 11° 49′,	3,409
Rauhe Alp, or Mountains of Swabia,—	
Crest of the eastern portion of the ridge in general,	2,700
Town of *Sigmaringen*, on the Danube, N. Lat. 48° 5′, E. Long. 9° 13′,	1,913
Höhenberg,	3,370
Deilinerberg,	3,330
Schafberg, N. Lat. 48° 13′, E. Long. 8° 49′,	3,324
Plätternberg,	3,307
Source of the *Neckar*,	2,290
Schwarz-Wald, or Black-Forest Group,—	
Rossbühl, summit of the *Knisbis*, in the SW. of Wurtemberg, N. Lat. 48° 30′, E. Long. 8° 15′,	3,120
Source of the *Danube*, E. of Donauschingen,	2,178
Kandelberg, NE. of Freyburg, N. Lat. 48° 4′, E. Long. 7° 59′,	4,160
Feldberg, { Summit, N. Lat. 47° 52′, E. Long. 7° 56′,	4,675
{ Lentzkircher Hütte,	4,288
Baldenberg, N. Lat. 47° 49′, E. Long. 7° 50′,	4,642
Blauenberg, N. Lat. 47° 37′, E. Long. 7° 41′,	3,822
Rohrkopf, E. of Zell,	3,968
Kohlgarten,	4,039
SECONDARY CHAINS AND RANGES.	
Piatra Taplino Mountains, or Eastern Carpathians,—	
Bukhest or *Bulhest*, between the passes of Tomos and Torzburg, 13 miles SSW. of Kronstadt,	8,700
Szurul, E. of Rother-Thurmer Pass, and 20 miles SE. of Hermanstadt,	7,574
Rusku-Poyana, on the frontiers of the Bannat and Transylvania, N. Lat. 45° 45′, E. Long. 22° 30′,	9,912
Mountains of Hungary,—	
Matra, 20 miles W. of Erlau,	3,312
Medves Mountains, 20 miles NW. of Erlau,	2,178
Visseka, 30 miles ENE. of Schemnitz,	2,952
Klakberg, 15 NW. of Schemnitz,	4,200
Hercynian Mountains,—(Secondary Ranges and Groups),	
Mountains of Moravia and Bohemia, E. of the Böhmerwald,—	
Rotschotte, } in the *Mokrisch-Gebirge*,	1,514
Kreutzberg, }	2,178
Donnesberg, } in the *Mittel-Gebirge*,	2,673
Hoeltsch, }	2,153
Hohenstein,	4,384
Rhoen (Bohemian),	3,484
Plockenstein,	4,450
Steinberg,	3,511
Böhmerwald Chain,—	
Lakes of *Teschmitz*,	4,104
Drey Sesselberg, N. Lat. 48° 45′, E. Long. 13° 57′,	4,049
Boubin, or *Kubaniberg*,	4,496
Aussergefeld, N. Lat. 49° 1′, E. Long. 13° 33′,	4,373
Rachelberg, N. Lat. 48° 58′, E. Long. 13° 24′,	4,561
Haydelberg,	4,616
Arber, or *Aidweick*, N. Lat. 49° 7′, E. Long. 12° 46′,	4,613
Village of *Frauenberg*, N. Lat. 49° 41′, E. Long. 12° 44′,	2,608
Thuringer-Wald,—	
Blessberg, source of the Werra, 21 miles SW. of Rudölstadt,	2,748
Schneekopf, or *Beerberg*, N. Lat. 50° 42′, E. Long. 10° 43′,	3,075
Inselberg, N. Lat. 50° 52′, E. Long. 10° 28′,	2,517
Meisner, Culminating Point, N. Lat. 51° 13′, E. Long. 9° 50′,	2,325
Harz, or Hartz Mountains,—	
Zwieselberg, N. Lat. 51° 35′, E. Long. 10° 56′,	1,387
Heinrichshöhe, N. Lat. 51° 48′, E. Long. 10° 37′,	3,409
The *Broken*, or *Blocksberg*, in the SW. of Magdeburg, N. Lat. 51° 48′, E. Long. 10° 36′,	3,658
Great Königsberg, N. Lat. 51° 47′, E. Long. 10° 35′,	3,307
Bruchberg, N. Lat. 51° 47′, E. Long. 10° 29′,	3,235
City of *Göttingen*, N. Lat. 51° 32′, E. Long. 9° 57′,	510
Rhön-Gebirge, or Höhe-Rhone,—	
Engelsberg, near Tann,	2,382
Ellenbogen,	2,620
Kreuzberg, or *Heilige-Kreuzberg*, N. Lat. 50° 20′, E. Long. 10° 1′,	3,027
Dreystelz, near Hamelburg,	2,160
Vogelsberg,—	
Oberwald,	2,430
Taufstein, source of the Nidda,	2,283

SECONDARY CHAINS AND RANGES,—Hercynian Mountains (continued),—	Feet.
Spesshardt,—	
Orber-Reisig, near Orb,	2,130
Höhe-Wart,	1,968
Hockenhöhe,	1,920
Johannisberg, near Aschaffenburg,	1,617
Odenwald,—	
Katzenbuckle,	2,000
Melibocus, S. of Darmstadt,	1,782
Walzknopf,	1,867
Taunus, Taussen-Gebirge, or Die Höhe,—	
Platte, N. of Wisbaden, N. Lat. 50° 7′, E. Long. 8° 14′,	1,597
Ruins at *Königsten*, N. Lat. 50° 11′, E. Long. 8° 27′,	1,342
Altkönig, N. Lat. 50° 13′, E. Long. 8° 28′,	2,500
Gross-Feldberg, NW. of Frankfort, N. Lat. 50° 14′, E. Long. 8° 26′,	2,775
Stoppelberg, near Wetzlar, N. Lat. 50° 35′, E. Long. 8° 33′,	1,227
Westerwald, and neighbouring Groups to the north,—	
Galfenstein, near Kirberg,	1,702
Galgenberg, or *Salzburgerkopf*,	2,776
Löwenberg, summit in the *Siebenberg*, on the E. side of the Rhine, opposite Bonn, N. Lat. 50° 40′, E. Long. 7° 15′,	2,024
Gänsehalls, also in the Siebenberg,	1,650
Nordhelle, summit in the *Ebbe-Gebirge*, 17 miles S. of Iserlohn,	2,250
Town of Solingen, N. Lat. 51° 10′, E. Long. 7° 5′,	690
Source of the *Sieg*,	1,880
Balverwald, summit in the *Sauerland-Gebirge*, E. of the Ebbe-Gebirge, and N. of the E. branch of the river Lenne,	1,758
Kähle (Col) of *Astenberg*, near Winterberg,	2,707
Bollerberg, near Medebach,	1,404
Danish Group,—	
Kalkberg, near Segeberg in Holstein,	282
Kniosberg, in Schleswig,	423
Himmelbierg, in Jutland,	928
Dysted-bierg, in Zealand,	620
Island of *Heligoland*,	230

SLAVONIC SYSTEM.—Notwithstanding the pompous titles, *Mountains of Waldai*, *Schemockonskie Mountains*, &c. with which geographers and map-makers have graced the slight undulations which occurs in the vast plateau of Russia, it may without hesitation be affirmed, that this large portion of the European continent presents no series of ridges that can properly be called mountain chains. The whole of that region is only an elevated plain surmounted by hills of greater or lesser altitude, but none of which reach a height of more than 1,150 feet above the level of the Baltic. Hassel and other German geographers have named the central portion of these eminences the *Alt-ussi Mountains*; Bruguière denominates them the *Sarmatian System*, while Malte-Brun simply applies the name of *Plateau of Waldai* to the whole of the region in which they are found. The highest of these eminences, or those which have been called *Waldai Mountains*, are situate between the governments of Twer and Novgorod, their culminating point being between Ostaschkow and Waldai. The other Waldaian hills are distributed over the governments of Moscow, Smolensk, Toola, Orel, and Kourak. The eminences dignified with the denomination of *Schemockonskie Mountains*, and which stretch along the southern border of the government of Arkhangel, are attached on one side to the Scandinavian System, and on the other to that of the Ourals; while the prolongation of the heights of Waldai connects with the Slavonian System, the hills in the governments of Witebsk and Courland; and the continuation of the rising grounds in the government of Kourak appears in like manner to connect the south-western extremity of the Slavonic System with the farthest eastern branches of the Hercynio-Carpathian System, by the steep granitic rocks near the course of the Dnieper in the government of Iekaterinoslav. The Slavonic System, although the least elevated of all those which belong to Europe, is nevertheless the most extensive. From its flanks descends the Volga, the largest river of the European continent, and it also gives birth to the Dnieper and the Don. The mountains in the *Crimea* are allied to those included in the Caucasian System.

The most remarkable heights in the Slavonic System are,—	Feet.
Town of *Novgorod*, N. Lat. 58° 31′, E. Long. 31° 16′,	453
Table-land or Plateau between Ostaschkow and Waldai or Valdai,	1,119
Town of *Ostachkow*,	856
City of *Moscow*, N. Lat. 55° 46′, E. Long. 37° 33′,	928

SCANDINAVIAN SYSTEM.—This system embraces all the mountains of Norway, Sweden, and Lapland, together with the heights which diversify the surface of Finland and the governments of Olonetz and Arkhangel. The river Onega and the White Sea may be considered its eastern boundary, and its other limits are traced by the Gulf of Finland, Baltic, Kattegat, and North Sea. The principal chain commences at Cape Lindesnæs, the southern extremity of Norway; it expands over Norway, the main ridge in the northern portion of its course marking the line of distinction between that country and Sweden; it then traverses Finmark, and terminates at Cape Nord-Kyn, the most northern point of continental Europe. The ancient geographers denominated this chain *Mons Seve*; but as it bears no modern general name, we propose to call it the *Scandinavian Chain*. In its long course towards the north it takes the following names,—Thulian Mountains or Langfield in Norway, as far as the 62d parallel: Dovre-Fiall* or Dofre-Field or Dofrines in the same country, from the 62d to the 63d parallel; and Koelen or Kioel between Norway and Sweden and in Finmark, from the 63d parallel to the Nord-Kyn. Of the mountains thus collectively denominated, it is only the central portion or Dofrines in which the features of a true chain can be recognised; the *Thulian Mountains* and the *Kioel* are, properly speaking, only table lands surmounted by isolated ranges and groups.

At the eastern extremity of the Dofrines, and immediately in the neighbourhood of Syltfiallen, some ranges are detached from the principal chain; they enter Sweden, and stretch into Jamtland, Herjeadalen and Kopparberg, where they terminate in hills of no great elevation.

Some small eminences, which are detached from the plateau of Lapland, join the rocky hills of Finland, and those in the government of Olonetz, forming ranges which are lost in winding among the

* *Fjæl* (Fial) or *Fjell*, in Swedish, signifies a ridge or chain of mountains. *Field* is the Danish name for a mountain or hill.

numerous lakes of these countries. In some maps, these ranges appear under the names of *Manskella Mountains* in Finland, and *Mountains of Olonetz* in the government of that name — denominations to which, from their slight elevation, they are not entitled. Other heights, still less considerable, set out from the same plateau, and extend over the western portion of the government of Arkhangel.

The groups of the Lofoden and Tromsen Islands, so famous for their fisheries, and which form the Norwegian Archipelago, may be considered a dependent chain of this system, and named the Maritime Chain.

TABLE OF THE CULMINATING POINTS AND OTHER HEIGHTS IN THE SCANDINAVIAN SYSTEM.

PRINCIPAL CHAIN, —	Feet.
Thulian Mountains, —	
Brok-field, on the E. of Lake Kvide, Christiansand,	4,188
Mountains on the W. of *Kongsberg*, province of Aggershuus,	2,970
Hougle-field, N. Lat. 59° 40′, E. Long. 7° 23′,	4,668
Gousta, the southernmost of the Norwegian glaciers, N. Lat. 59° 45′, E. Long. 8° 38′,	6,477
Lake Tind, a little to the E. of the Gousta glacier,	630
Blee-field, on the E. of Lake Tind,	4,500
Melderskin (summit always above the lower limit of perpetual snow), near Rosendal, on the Hardanger-Fiord, N. Lat. 60°,	4,859
Gute-field, N. Lat. 60° 0′, E. Long. 7° 27′,	4,774
Tind-field, N. Lat. 60° 5′, E. Long. 8° 20′,	4,871
Glacier of *Folgefund*, on the E. of Hardanger-Fiord,	5,442
Folgefund (summit), N. Lat. 60° 7′, E. Long. 6° 25′,	5,633
Eggedals-field, NW. of Drammen, and between the river Eggedals and Kroren-Fiord,	4,320
Glacier of *Haartigen*, N. Lat. 60° 12′. E. Long. 7° 32′,	5,550
Glacier of *Jokeln*, N. Lat. 60° 22′, E. Long. 7° 38′,	5,550
Glacier of *Halling Skarvan*, E. of the Jokeln Glacier,	5,460
Mountains SW. of *Hoel*, N. Lat. 60° 25′,	5,863
Hardanger-field (summit), N. Lat. 60° 40′, E. Long. 7° 50′,	5,748
Scogshorn, N. Lat. 60° 45′, E. Long. 8° 55′,	6,926
Sommen, in the *Fille-field*, N. Lat. 61° 0′, E. Long. 8° 20′,	4,797
Pass of *Fille-Field*, on the road from Bergen to Christiania, N. Lat. 61° 4′, E. Long. 8° 2′,	3,975
Nugna-field, N. Lat. 61° 20′, E. Long. 8° 45′,	7,215
Sogne-field, N. Lat. 61° 22′, E. Long. 8° 3′,	7,182
Skagstol- Tind, N. Lat. 61° 24′, E. Long. 7° 55′, { Orographie de l'Europe, / Balbi,	{ 8,101 / 8,395
Justedalsbräen, N. Lat. 61° 30′, E. Long. 6° 50′,	5,847
Lang-field, N. Lat. 61° 53′, E. Long. 7° 50′,	6,598
Stödyam, E. of the sources of the Dall,	3,810
Table-land, forming the base of this chain or group,	3,200
Dovre-Field, or Dofrines, —	
Pighatten, N. Lat. 62° 2′, E. Long. 9° 30′,	6,788
Lake of *Lessöevarks*, situate on the superior level of the ridge, and said to discharge its waters both into the North Sea and into the *Skager-Rack*, N. Lat. 62° 8′, E. Long. 8° 38′,	1,958
Tron-field, on the Glommen River, near Tonset, N. Lat. 62° 14′, E. Long. 10° 52′,	5,870
Sneehatten, generally considered the highest of the Scandinavian Mountains,* N. Lat. 62° 20′, E. Long. 9° 20′,	8,120
Helagffjallet, N. Lat. 62° 53′, E. Long. 12° 28′,	5,945
Syl- Fiellen, N. Lat. 63° 0′, E. Long. 12° 12′,	6,486
Koelen, or Kiöel Mountains, —	
Gencken, N. Lat. 63° 14′, E. Long. 11° 45′,	4,871
Areskutan, N. Lat. 63° 27′, E. Long. 12° 53′,	4,721
Sulitelma, N. Lat. 67° 5′, E. Long. 16° 20′,	6,178
Pass of *Almajaloe*, N. Lat. 67° 12′. E. Long. 16° 12′,	5,545
Mountain E. of *Rorstad*, N. Lat. 67° 33′, E. Long 15° 37′,	4,692
Ankenaes, N. Lat. 68° 19′, E. Long. 17° 24′,	4,871
Lyngen Mountains, N. Lat. from 69° to 70°, E. Long. from 19° to 21°,	4,200
Jauriwara, W. of the river Tana, on the S. frontier of Finmark,	1,806
Lake *Enara*, in Russian Lapland,	726
Vorjeduder, in Finmark, N. Lat. 69° 45′, E. Long. 24° 38′,	3,600
Peninsula of *Joke-field*, N. Lat. 69° 15′. E. Long. 22° 50′,	4,370
Maritime, or Insular Chain of Lapland, —	
Glaciers in the islands of *Ost Waagen* and *Hindoen*,	3,900
Glacier in the island of *Seiland*,	4,156
Summits of the islands of *Fugloe*, *Vannen*, and *Arenoe*,	3,200
North Cape, island of Mageroe,	1,161

SARDO-CORSICAN SYSTEM. — This system, situate in the Mediterranean, comprehends all the mountains of Corsica and Sardinia. The principal chain extends from the narrow and hilly peninsula named Cape Corso, in the north of Corsica, to Cape Teulada and Cape Carbonara, in the south of Sardinia, the Strait of Bonifacio, which divides it into two portions, being merely a break or rent in its ridge.

The ranges, primary or detached, which are the component parts of this chain, may thus be enumerated: — In CORSICA — The range of *Titime*, commencing in Cape Corso, in the north of the island; the heights of *Frontogna* on the north-west; the *Mountains of Cagnone* in the centre; and the range of *Cuena* on the south. In SARDINIA — The *Lymbara Mountains*, to the south of Tempio, in the north of the island; the *Nurra Mountains*, extending from the gulf of Asinara to that of Alghero; the *Marghine Mountains*, to the east of Bosa, on the western coast — the main ridge consisting of the *Ginargentu Mountains*; and parallel to the last-named ridge, but nearer the eastern coast, the *Octiastra Mountains*, which are continued in the *Budui Mountains*, to the south of the river Flumendoso.

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* In Balbi's "Abrégé de Géographie," *Skagstol-Tind* is named as the culminating point of the system, and its elevation stated to be (*See a preceding portion of our Table*) 1,313 toises, or 8,395 English feet.

TABLE OF THE CULMINATING POINTS AND OTHER HEIGHTS IN THE SARDO-CORSICAN SYSTEM.

PRINCIPAL CHAIN.—	Feet.
Corsican Ridge,—	
Monte Stello, S. of Cape Corso and N. of Bastia, N. Lat. 42° 47′, E. Long. 9° 24′,	4,530
Monte Paglia Orba, N. Lat. 42° 21′, E. Long. 8° 53′,	8,690
Monte Rotondo, source of the Liamone, N. Lat. 42° 13′, E. Long. 9° 3′,	9,060
Monte d' Oro, source of the Gravone,	8,702
Punta della Capella, N. Lat. 42° 1′, E. Long. 9° 12′,	6,723
Monte dell' Incudine, N. Lat. 41° 51′, E. Long. 9° 12′,	6,746
Monte Calva, N. Lat. 41° 43′, E. Long. 9° 13′,	5,130
Punta d' Ovace, N. Lat. 41° 35′, E. Long. 9° 5′,	4,900
Sardinian Ridge,—	
Monte Gigantinu (culminating point of the *Lymbara Mountains*), N. Lat. 40° 49′, E. Long. 9° 7′,	3,993
Monte Argentaro, in the W. of the *Nurra* group,	2,010
Cape Caccia, N. Lat. 40° 39′, E. Long. 8° 5′,	510
Monte Ferru (summit in the *Marghine Mountains*), S. of Bosa,	2,736
Monte Albo, 11 miles WSW. of Cape Comino,	2,300
Cape Monte Santo, N. Lat. 40° 8′, E. Long. 9° 45′,	2,400
Monte Schiuschiu (culminating point of the *Ginargentu Mountains*), about N. Lat. 39° 55′, E. Long. 9° 12′,	6,000
Monte Arcuentu, on the S. of the Gulf of Oristano,	2,216
Sette Fratelli (Seven Brothers), W. of Cape Ferrato, E. of the *Budui Mountains*, and N. of Cape Carbonara,	2,310

BRITANNIC SYSTEM. — This system includes the mountains and other eminences in Great Britain, Ireland, the Hebrides, the Orkney and Shetland Isles, and the Danish Islands of Faröe. It presents a number of isolated summits, frequently at considerable distances from one another; some groups of no great extent, and a few continuous ranges, to none of which, with probably the single exception of the Grampians in the north of Scotland, the denomination of "Mountain Chain" can with propriety be applied. From considerations of convenience, rather than with a view to develope any general system of connection between the principal groups and ranges, an attempt from which we are precluded by our limited space, as well as by the difficulties attending the subject, we proceed with our brief descriptions under the following collective heads: — *1st*, Northern Highlands of Scotland; *2d*, Grampian Hills; *3d*, Ranges intermediate between the Grampians and those in which the Cheviots are continued on the north; *4th*, Cheviot Hills and continuous northern ranges; *5th*, Great western chain of England; *6th*, Detached ranges and groups in the east and south of England; *7th*, Mountains of Ireland; and *8th*, Chain of summits in the northern and western island groups.

1. NORTHERN HIGHLANDS OF SCOTLAND. — The mountains which compose this remarkable and widely spread group, extend on the west, southwards from Cape Wrath to the Caledonian Canal in Glenmore, or the *great valley*, which throughout its length, from the west coast to the east, separates them from the Grampian chain and its branches. They cover the whole of the western portion of the counties of Sutherland, Ross, and Inverness, and send out branches to the east, particularly in Ross-shire and Sutherlandshire, in the latter of which counties a range detached from a point to the east of Lochmore, stretches to Duncansby-Head, the north-eastern extremity of Caithness-shire, and separates the streams which fall into the German Ocean from those which flow *northward* towards the Atlantic. The loftiest summits in the group are situate in the counties of Ross and Inverness. The country included between Lochbroom, in the north-west of Ross-shire, and Cape Wrath — probably one of the most savage, rocky, and barren tracts in Scotland — has no very high hills, although for a considerable distance inland it is in general elevated about 1000 feet above the level of the sea.

The celebrated mountain *Ben Nevis*, which till lately was considered the highest summit in the British system, may be placed into this group; for although situate to the south of the Caledonian Canal, it is separated from the northern flank of the Grampians by a desolate tract, several miles in width, called the Moor of Rannoch.

2. GRAMPIAN HILLS. — This important range or chain, which throughout nearly the whole of its length marks the line of separation between the Highlands and the Lowlands of Scotland, commences on the south side of Loch Etive in Argyllshire. It first bends east and south into Stirlingshire, then turning to the north-east, it proceeds in a waving line through Perthshire, and along the southern border of Aberdeenshire into Kincardineshire, and terminates between Stonehaven and the mouth of the Dee, in the north-eastern portion of the last-named county. Its loftiest summits are those in the eastern portion of the chain, and particularly the mountains near the sources of the Dee and the eastern tributaries of the Spey. Of these and the other elevations in the high-lands of Aberdeenshire and Kincardineshire, very little has till lately been known, and that alone by the aid of the barometer, but it is proved that there are eminences in that remote district capable of at least throwing a doubt upon the claim of Ben Nevis to be the highest land in Britain.*

Several ranges of no great elevation are detached from the northern face of the Grampians. One of these detached ranges, called the Monagh Lea (*i. e.* the Dark Gray Mountains), a valuable grazing tract in Inverness-shire, stretches in a north-easterly direction between the beds of the rivers Findhorn and Spey, and is continued in *Brae Murray* (Murray Heights), in the detached portion of Inverness-shire, which divides the county of Elgin, and in the Elginshire hills, terminating on the north in Burgh-Head and Stotfield-Head, or Coulard Hill. Another range, which commences in the *Braes of Abernethy*, a little to the north of the lofty granitic group of Ben Mac-Dui, Cairngorm, and Ben Avon, extends also towards the Murray Firth, between the beds of the Spey and the Doveran. Detached or outlying summits, mostly granitic, are sprinkled over the whole of the western and northern portions of Aberdeenshire.

3. RANGES INTERMEDIATE BETWEEN THE GRAMPIANS AND THE NORTHERN CONTINUATIONS OF THE CHEVIOTS. — This remarkable group, occupying a portion of the extensive plain or lowlands comprehended between the primitive stratified and granitic mountains of the Grampian chain on the north, and the transition hills of the south of Scotland on the south, consists of two long and elevated ranges of trap-rocks, the one situate in part to the north of the Forth and Clyde, the other to the south of the former river.

The northern range commences on the east, a little to the south of Montrose in Forfarshire, and it extends south-west as far as the town of Dumbarton on the Clyde. It has no general appellation, but is called the Sidlaw Hills, from nearly its eastern extremity to the Tay; the Ochill Hills, from

* Professor J. D. Forbes, — "*Practical Inquiries connected with the Measurement of Heights.*" — *Edinburgh Journal of Science, N. S. Vol. IV.* According to one of the recent measurements above alluded to, *Ben Mac-Dui*, in the group of Cairngorm, on the borders of the counties of Inverness, Banff, and Aberdeen, is 4,390 feet above the level of the sea, or 17 feet higher than Ben Nevis.

the Tay westward to the Forth at Stirling; the Campsie Hills, from the Forth to the western boundary of Stirlingshire; and the Kilpatrick Hills in Dumbartonshire, east of the Leven. Outlying the eastern portion of the range is a small group (also trapean in its geological structure), called the *Lomond* or *Lamond Hills*; it is situate between the Leven and the Eden, in the east of Kinrossshire and the west of Fifeshire.

The range south of the Forth is called the Pentland Hills. It commences about five miles to the south of Edinburgh, and extends in a ridge running from north-east to south-west, as far as the point of junction between the counties of Mid-Lothian, Peebles, and Lanark. Southward from this point it is continued in one of the branches detached from the Lowther Hills, a range which falls to be described in our next numerical section.

Outlying the Pentland range, and sprinkled over the counties of Linlithgow, Mid-Lothian, and Haddington, are a number of isolated summits, highly interesting in a geological point of view, as in their constituent rocks they present nearly every variety of the trap formation, from columnar basalt and greenstones, through all their varieties of porphyries and amygdaloids, to the less perfect wacké. The names, positions, and elevations of the most remarkable of these eminences are given in our table of the heights connected with this system.

4. CHEVIOT HILLS AND THEIR NORTHERN CONTINUATIONS.—The range of the Cheviots (properly so named), is situate partly in England and partly in Scotland. It separates Northumberland from Roxburghshire, stretches through the latter county in a westerly direction, keeping to the north of Liddisdale, then bending north-west towards the junction of the counties of Roxburgh, Selkirk, and Dumfries, it unites with the Lowther Hills, an extensive group, which, having Ettrick Water, near the above-mentioned junction, for its eastern boundary, spreads over the southern portion of the counties of Selkirk, Peebles, and Lanark, and the north of Dumfries-shire, and in the west of the latter county joins the ridges, which passing through Kirkcudbrightshire, Wigtonshire, and the south of Ayrshire, terminate at Loch Ryan on the Irish Channel.

A branch detached northward from the Lowthers, in the direction of the boundary line between the counties of Lanark and Peebles, joins, as we have already noticed, the southern extremity of the Pentland Hills. A little to the east of that point of junction, and separated from the Pentlands by the basins of the small streams called the North and South Esk, the Moorfoot Hills, a series of heights commencing on the west at Eddleston Water, in the north-east of Peebles-shire, extends east-north-east to Crookston Burn, a feeder of Gala Water, one of the tributaries of the Tweed, on the confines of the counties of Mid-Lothian, Haddington, and Berwick, at which point it unites with the Lammermoor Hills, a range forming in part the boundary between Haddingtonshire and Berwickshire, and terminating at East Castle and St. Abb's Head, in the latter county. A little group called the *Eildon Hills*, of which trap forms the constituent rock, is situate in the north of Roxburghshire, between Ale-Water and the Tweed. A similar group named the *Meagle* or *Meg Hills* occurs in the north-east of Selkirkshire.

5. NORTHERN AND WESTERN CHAIN OF ENGLAND.—This great range extends (not however without some considerable interruptions), from the Cheviots in Northumberland on the north-east to Land's End in Cornwall on the south-west. Its most elevated summits rise somewhat abruptly near the west coast, and its eastern declivities give birth to all the considerable rivers of England, with the exception of the Severn and the Eden. It is usually divided into three portions, bearing respectively the names of the Northern, the Cambrian, and the Devonian ranges.

The *Northern Range* commences at Carter Fell, in the north-west of Northumberland, and stretches southward into the middle of Derbyshire, spreading to the east over a considerable portion of the county of Durham, and the North and West Ridings of Yorkshire, and including as a western branch the elevated hills of Westmoreland and Cumberland.

The *Cambrian Range*, or Alpine portion of the great chain of England, extends in various ridges and groups over the whole of the Principality of Wales. The loftiest of the Welsh ridges is that which stretches across Caernarvonshire from south-west to north-east, and of which the culminating point is Snowdon, the most elevated of the British mountains south of the Grampians. Another ridge, which is sometimes called the *Feruyn Mountains*, occupies the eastern side of Merionethshire, and branches out into the neighbouring counties of Denbigh and Montgomery. From the central mass named Plynlimmon, situate on the borders of Montgomeryshire and Cardiganshire, and in which the Wye, the Severn, and several minor rivers have their sources, a range of no great elevation stretches southward to Tregaron, and from thence in a south-westerly direction to the western boundary of Caermarthenshire, and unites with the *Precelly Hills* in Pembrokeshire. Detached from Plynlimmon towards the east are the *Cerri* and *Freiddin Hills*, extending along the vale of the Severn in Montgomeryshire; and the *Bettys Hills*, on the north-eastern borders of Radnorshire. A range called the *Black Mountains*, extends east and north-east from the Llw, in the south-east of Caermarthenshire, across the county of Brecknock to the western borders of Herefordshire and Monmouthshire; the eastern extremity of the ridge is called the *Hatteral Hills*. Outlying the mountains of South Wales, the *Malvern Hills*, on the confines of Herefordshire and Worcestershire, but extending in part into Gloucestershire, form the western boundary of the Severn in its course through the two last-named counties. On the east of the Severn the *Cotswold Hills* stretch through Gloucestershire, in the direction of Warwickshire, and may be deemed a continuation of the great northern range, which, as we have already seen, extends from the Scottish border into the middle of Derbyshire.

The main ridge of the *Devonian Range* extends in a north-easterly direction from Land's End in Cornwall to the middle of Devonshire, and from thence eastward to the valley of the Exe. Its highest point is in the neighbourhood of Oakenham in Devonshire, and in the northern portion of a remarkable elevated and for the most part barren granitic tract called *Dartmoor*, comprehended between Oakenham on the north, Tavistock on the west, Modbury on the south, and Ashburton and Moreton Hamstead on the east. Two inferior ridges, the one skirting the Cornish coast to the north of Trevose Head and Padstow, the other stretching northward from Oakenham, meet on the south of Bideford Bay. A more important ridge follows the coast of the Bristol Channel, from Ilfracombe to Bridgewater. Its western portion is named the *Brendon Hills*, and its eastern the *Quantock Hills*. A little to the east of this range the *Mendip Hills* stretch along the north bank of the Ax, from the mouth of that river to Shepton Mallet, thus terminating not far from the extreme branch of the Cotswold Hills, which extends to the line of the Radford Canal, on the south-west of Bath.

6. RANGES IN THE SOUTH AND SOUTH-EAST OF ENGLAND. — The ridges in this class, all of which are composed of chalk hills, inconsiderable in point of elevation, have their origin in the high tableland called *Salisbury Plain*, which covers the portion of Wiltshire to the south of the Wilts and Berks Canal. The principal ridges are three in number. The most southern crosses Hampshire and Sussex, and terminates at Beachy Head on the English Channel. The celebrated sheep pasture tract called the *South Downs*, constitutes the Sussex portion of the ridge. Another range stretches from the north of Salisbury Plain to the eastern portion of Kent. It is not distinguished by any particular designation, except in the neighbourhood of Farnham, in the west of Surrey, where the ridge becoming very narrow, is named the *Hogsback*; to the eastward of this point it expands into the *Surrey Downs*. A third ridge, for the most part of greater elevation than the two to which we have already alluded, commences at Devizes in Wiltshire, and after describing in its course a curved line, having its extreme northern point at Wantage in Berkshire, and its eastern extremity near the bend of the Thames

at Reading, in the same county, it proceeds in a north-easterly direction through the counties of Oxford, Buckingham, Bedford, Hertford, Cambridge, Suffolk, and Norfolk, and terminates between Wells and Hunstanton, on the eastern shore of the Wash. The portion of it extending from Henley in Oxfordshire to Tring in Herts, is called the *Chiltern Hills*; and that in the south of Cambridgeshire is named the *Gogmagog Hills*.

7. MOUNTAINS OF IRELAND. — Ireland, in respect to its orography, presents a remarkable aspect, as its coasts, particularly the southern, south-western, and northern, exhibit a series of ridges of various degrees of elevation, inclosing an extensive plain in the centre of the island, of which nearly a million of acres or 1500 square miles consists entirely of bog-land, occasioned by the extreme flatness of the country.* The great mountainous or alpine tract of Ireland extends from Waterford on the east coast to Dingle Bay on the west, and comprehends the whole of the county of Waterford, and large portions of the counties of Cork and Kerry. The principal ranges in this tract, commencing with those nearest the coast, are the *Commeragh Mountains*, the highest portion of a ridge running along the south bank of the Suir, from the town of Waterford to Clonmell in Tipperary; the *Knockmeledown Mountains*, on the borders of the counties of Waterford and Tipperary to the north of the Blackwater River; the *Neagle* and *Bograh Mountains* in Cork, on the south of the Blackwater; the *Sheehy Mountains*, in the south-west of Cork; the *Cappa Hills*, in the south of Cork; the *Muskerry Mountains*, between the sources of the Sullane and Roughty, in the west of Cork and south-east of Kerry; the *Glanerought* or *Caha Mountains* in Cork and Kerry, between the head of Bantry Bay and Kenmare; *Magillicuddy Reeks* in Kerry, between the Lake of Killarney and Lough Carragh; the *Dunkerrin Mountains*, between the Lake of Killarney and Lough Currane; the *Iveragh Mountains*, to the west of Magillicuddy Reaks; and the *Brandon Mountains*, in the west of Kerry, between Dingle Bay and Tralee Bay.

The mountain ranges (or rather groups) in the interior of this portion of Ireland, are — the *Galtees*, *Oliver Hills*, and *Ballihoura Mountains*, forming a continous ridge, extending west-south-west from the western bank of the Suir, opposite Cahir in Tipperary, into Limerick and the north-eastern portion of Cork; the range formed by the *Doon Mountains*, the *Keeper* (to the north of the Doon Mountains), the *Devil's Bit*, and the *Slievh Bloom* or *Bladmah Mountains*, extending north-east from the eastern bank of the Shannon near the town of Limerick to the river Barrow on the borders of King's County and Queen's County; the *Arra Mountains*, rising above the south-eastern portion of Lough Derg; the *Inchquin* or *Tullow Mountains*, in the north-east of Clare; and the *Slievh Boughty* or *Derrybryan Mountains*, on the southern border of Galway, from Lough Cooter and Loughrea to Lough Derg.

The principal ranges and groups upon or near the north-western and northern coasts are — the *Glan Hills*, on the south and west of Lough Corrib; the *Twelve Pins*, on the west of Lough Inagh in Connemara, in the north-west of Galway; the *Fernamoor Mountains*, to the west of Lough Mask, in the counties of Galway and Mayo; the *Slievh Dert Mountains*, to the north of Dunmore in the north of Galway; the *Barnagee Mountains*, between Castlebar and Lough Conn, in Mayo; the *Nephin Bog Mountains*, on the west of Lough Conn; the *Slievh Gauff* or *Ox Mountains*, extending from the eastern bank of the River Moy near Lough Cullin to Sligo Bay; the *Curlew Mountains*, on the borders of Sligo and Roscommon; the *Slievh Bawn Mountains*, on the north of Lough Ree in Roscommon; the *Brauleve Mountains*, on the east of Lough Arrow, in the south-east of Sligo; the *Ballymogeerah Hills*, in the north-west of Cavan; the *Derryveagh* and *Arregel* or *Erigal Mountains*, to the north of the River Guiharra, in the north-west of Donegal; the *Carntogher Mountains*, on the borders of Tyrone and Londonderry; and the *Slievhlocher Hills*, in the north-west of Londonderry.

The principal ranges and groups on the east coast are — the *Glenocum Mountains*, extending along the east coast of Antrim; the *Slievh Croob* ridge, in the centre of Down county; the *Mourne Mountains*, in the south of Down county, between Dundrum Bay and Carlingford Bay; the *Slievh Girkin* or *Newry Mountains*, in the south of Armagh; the *Wicklow Hills*, in the county of that name; the *Black Stairs Hills*, on the borders of Carlow and Wexford; and, farther inland, the *Dysart Hills*, to the east of Ballinakill, on the borders of Queen's County and Kilkenny.

8. CHAIN OF SUMMITS IN THE WESTERN AND NORTHERN ISLAND GROUPS. — This division comprehends all the eminences in the Isle of Man; Bute; the island dependencies of Argyllshire; the island dependencies of the counties of Inverness and Ross, or the Inner and Outer Hebrides; the Orkney Islands; the Shetland Islands; and the Danish islands of Færoe. The names, positions, and elevations of the principal summits in these islands will be found in the concluding section of the following Table: —

TABLE OF THE CULMINATING POINTS AND OTHER HEIGHTS IN THE BRITANNIC SYSTEM.

NORTHERN HIGHLANDS OF SCOTLAND, —	*Feet.*
Cape Wrath or *Parph Head*, the NW. point of Sutherlandshire, N. Lat. 58° 36′, W. Long 4° 56′,	600
Dunnet Head, the N. point of Scotland, N. Lat. 58° 40′, W. Long. 3° 29′ (height of the lantern of the light-house),	346
Pap of Caithness, Caithness-shire, 24 miles S. by E. of Thurso,	1,229
Ord of Caithness, 29 miles S. of Thurso,	1,250
Morven (*i. e.* the great mountains), on the S. of Berrydale Water, in the S. of Caithness-shire,	2,334
Ben Ormen (Bein Ormin, *i. e.* gold dust mountain), Sutherlandshire, N. Lat. 58° 14′, W. Long. 4° 14′,	2,307
Ben Clibbrick (Bein Cllbereach, *i. e.* mountain of the skirmish), Sutherlandshire, on the S. of Loch Naver, N. Lat. 58° 15′, W. Long. 4° 21′,	3,165
Ben Hee (Bein Shee, *i. e.* fairy mountain), Sutherlandshire, on the E. of Loch More,	2,853
Ben More (*i. e.* great mountain), Sutherlandshire, on the E. of Loch Assynt,	3,231
Ben Dearg (*i. e.* red mountain), Ross-shire, 6 miles ESE. of the head of Loch Broom,	3,551
Ben Lair, Ross-shire, on the N. of Loch Maree,	3,000
Ben Wyvis (Bein Uamhais, *pronounced* Uavis, *i. e.* mountain of horror or terror), Ross-shire, and partly in Cromarty; 10 miles NW. of Dingwall,	3,730
Ben Attow (Bein a tubha, *pron.* Bein a tu, *i. e.* thatch or rush mountain), on the borders of Ross-shire and Inverness-shire, N. Lat. 57° 16′, W. Long. 5° 14′,	4,000
Mealfourvony (Meal chuirn mhonidh, *pron.* Meal vurn voni, *i. e.* the height of mountain streams), Inverness-shire, on the W. of Loch Ness, and 19 miles SW. of Inverness,	2,730
Craig Phadrick, Inverness-shire, 3 miles SW. of Inverness,	1,150

* Parliamentary Paper.

	Feet.
NORTHERN HIGHLANDS OF SCOTLAND (continued)—	
Highest point of the Caledonian Canal, between Loch Lochie and Loch Oich,	90
Loch Ness,	45
Ben Nevis[a] (Bein a Bhais, *pron.* Ben e vais, *i. e.* mountain of death), Inverness-shire, N. Lat. 56° 47′, W. Long. 4° 47′,	4,378
Tarn or mountain lake on the northern slope of Ben Nevis,	1,700
GRAMPIAN MOUNTAINS,†—	
Principal Chain,—	
Cruachan Ben or *Ben Cruachan* (*i. e.* mountain the summits of which resemble stacks or ricks), Argyllshire, rises above Bunawe, on the S. side of Loch Etive,	3,670
Ben Eim, Argyllshire, at the head of Loch Long,	3,301
Ben Arthur or the *Cobler*, Dumbartonshire, on the S. of Arrochar, near the head of Loch Long,	2,863
Ben Lomond (*i. e.* the bare or naked mountain), Stirlingshire, on the E. side of Loch Lomond, N. Lat. 56° 11′, W. Long. 4° 36′,	3,191
Loch Lomond (average height of its surface),	22
Ben Ledi (Bein le Dee, *i. e.* mountain of gods), Perthshire, 5 miles W. by N. of Callender,	2,863
Ben Vorlich (Bein Mhorlic, *pron.* vorlic, *i. e.* the mountain of great flat stones), Perthshire, 9 miles S. by W. of Comrie,	3,180
Benchouzie, or *Achonzie* (Bein Chonich, *i. e.* foggy mountain), Perthshire, 8 miles NW. of Crieff,	3,026
Ben More (*i. e.* great mountain), Perthshire, on the S. of Loch Dochart, 10 miles SW. by W. of Killin,	3,818
Stobinnain, 2 miles SE. of Ben More,	3,794
Ben Lui (Bein Laoidh, *pron.* Ben lui, *i. e.* calf or fawn mountain), Perthshire, 14 miles W. by S. of Killin,	3,651
Meal Girdy (*i. e.* the rejoicing height), Perthshire, 6 miles NW. by N. of Killin,	3,364
Ben Lawers (Bein Labhair, *i. e.* echoing mountain), Perthshire, 7 miles NE. by N. of Killin,	3,945
Schichallion (Sith Chaillen, *i. e.* female fairy [mount]), Perthshire, 16 miles NE. by N. of Killin, N. Lat. 56° 40′, W. Long. 4° 5′,	3,514
Ben Dearg or *Deirg* (*i. e.* red mountain), Perthshire, 7 miles E. by N. of Blair Atholl,	3,550
Ben Gloe (Bein Glaodh, *i. e.* mountain of outcry), Perthshire, a group on the E. of Glentilt, and 7 miles NE. of Blair Atholl, — *Carn-an-gowar*, its highest summit,	3,690
House of the gamekeeper, in the middle of Glentilt,	700
Spittal of *Glenshee*, village in the NE. portion of Perthshire,	1,100
Scarsoch, in the extreme SW. portion of Aberdeenshire, and at the S. extremity of the great ridge or mass which diverges to the N. of the line of the principal chain, and has its northern termination in the Cairngorm group,	3,402
Ben Macdui, or *Ben Muchdui*‡ (Bein Muic Dui, *i. e.* black boar mountain), Aberdeenshire, on the S. side of Loch Avon, N. Lat. 57° 6′, W. Long. 3° 37′,	4,390
Cairngorm (*i. e.* the blue cairn), Inverness-shire and Banffshire, N. of Ben Macdui, in the same group,	4,095
Ben Avon or *Aven* (Bein Abhain, *pron.* aven, *i. e.* river mountain), Aberdeenshire and Banffshire, 7 miles E. by N. of Ben Macdui,	3,967
Cairntoul (*i. e.* cairn or hill of holes), Aberdeenshire, near Ben Avon,	4,245
Ben Uarn, Perthshire and Aberdeenshire, 10 miles E. of the Scarsoch,	3,589
Lochan-y-gar, Aberdeenshire, 6 miles SE. of Castletown of Braemar,	3,777
Mount Keen, Aberdeenshire, N. Lat. 56° 59′, W. Long. 3° 4′,	3,186
Battock, Kincardineshire, near the junction of that county with those of Aberdeen and Forfar,	2,600
Cuerloch, or *Kerloach*, Kincardineshire, 10 miles E. by N. of Battock Hill, and 10 miles W. by N. of Stonehaven,	1,890
Catlaw, Forfarshire, 7 miles NW. of Kirriemuir,	2,264
Flat called the *Howe of the Mearns*, traversed by the great road between Brechin and Stonehaven,	294
Detached Northern Ranges, Groups, and Summits,—	
The *Monach Lea* (*i. e.* dark gray mountains), Inverness-shire and Elginshire,	?
Beinrinness, Banffshire, 12 miles SW. by W. of Keith,	2,747
Corryhabbies, Banffshire, a little to the SE. of Beinrinness,	2,558
Knock Hill, Banffshire, 9 miles SW. of Banff,	2,508
The *Buck* or *Cabrach Buck* (a summit terminating a short range of the Grampians, detached from Ben Avon, in the Cairngorm group, and running N. of the Dee,, Aberdeenshire, 13 miles SSW. of Huntly,	2,377
Morren (*i. e.* the large mountain), Aberdeenshire, 14 miles W. by N. of Kincardine O'Neil,	2,880
Highest point of *Glentanar*, Aberdeenshire, about 9 miles WSW. of Kincardine O'Neil,	2,509
RANGES INTERMEDIATE BETWEEN THE GRAMPIANS AND NORTHERN BRANCHES OF THE CHEVIOTS,—	
Northern Range,—	
Sidlaw Hills,—	
Highest point of the *Garvock Hills* (a continuation of the Sidlaw Hills), Kincardineshire, a little to the S. of Laurencekirk,	1,003
Redhead, Forfarshire, on the S. of Lunan Bay,	200
Hill of Guthrie, Forfarshire, 7 miles E. of Forfar,	500
Dunnichen Hill, Forfarshire, 5 miles ESE. of Forfar,	720
Town of Forfar,	221
Belmont, Forfarshire, 5 miles SW. of Glammis,	759
Dundee Law, on the NW. of Dundee,	525

[a] Popularly, though erroneously, considered the highest of the British mountains. See remark and foot-note, p. 156.

† Although, for the sake of convenient arrangement, the mountains in the Western Islands of Scotland appear in another portion of this table, yet both in respect to their elevation and their geographical structure, they are, properly speaking, a continuation of the great Grampian range.

‡ See remark and foot-note, p. 156.

RANGES INTERMEDIATE BETWEEN THE GRAMPIANS AND NORTHERN BRANCHES OF THE CHEVIOTS,—

Northern Range (continued),—

	Feet.
Sidlaw Hills,—	
Sidlaw Hill, *King's Seat*, *Kinpurnie Hill*, } Highest points in the Forfarshire Sidlaw Range,	1,406, 1,258, 1,150
Dunsinnan Hill, Perthshire, 7½ miles NE. of Perth,	1,012
Kinnoul Hill, Perthshire, on the E. of Perth,	633
Ochil Hills,—	
Ben Clack (*i. e.* stormy mountain), Clackmannanshire, 5 miles N. by E. of Alloa,	2,359
Hill of Alva, Stirlingshire, 6 miles NE. of Stirling,	1,600
Dunmyatt, Stirlingshire, 2½ miles N. of Stirling,	1,345
Campsie and Kilpatrick Hills,—	
Campsie Hills, highest summit, about	1,500
Rock of Dumbarton Castle,	500
Lomond or Lamond Hills, and other Heights in Fifeshire,—	
Bishop's Hill, or *West Lomond*, Kinross-shire, 5 miles ENE. of Kinross,	1,280
East Lomond Hill, Fifeshire, on the S. of Falkland,	1,469
Largo Law, Fifeshire, on the N. of Largo,	968
Kelly Law, Fifeshire, 4 miles NW. of Anstruther.	880

Southern Range,—

Pentland Hills,*—

Kirkyetton, Edinburghshire, 5½ miles SSW. of Edinburgh Observatory, and 3½ miles ESE. of the village of Currie,	1,569
Allermuir, Edinburghshire, 3 miles ESE. of Currie,	1,616
Castle-Law, Edinburghshire, 3 miles SE. by E. of Currie,	1,390
Carnethy Hill, Edinburghshire, 4 miles SSE. of Currie,	1,700
East Black Hill, Edinburghshire, 4½ miles N. by W. of Currie,	1,876
West-Kip, or *Scald Hill*, Edinburghshire, 4½ miles S. by W. of Currie,	1,788
East Cairn Hill, or *Harper's Rig*, Edinburghshire, 6 miles SW. by S. of Currie,	1,902
Deerhope Rig, Peebleshire, 4 miles N. by W. of Linton, and 6½ miles SSW. of Currie,	1,718

Detached Eminences, &c. outlying a portion of the preceding ranges,—

Misty Law, Renfrewshire, 9 miles S. by E of Greenock,	1,240
Neilston Craig, Renfrewshire, 5 miles S. by W. of Paisley,	890
Summit level of Glasgow, Paisley, Kilmarnock, and Ayr railway,	96
——————— Glasgow, Paisley, and Greenock railway,	66
Kirk of Shotts (the highest point between the Forth and Clyde), Lanarkshire, E. of Airdrie, about	800
Summit level of the Forth and Clyde Canal,	145
——————— Union Canal,	226
——————— Edinburgh and Glasgow Railway,	296
Cairnaple, Linlithgowshire, 3½ miles S. by W. of Linlithgow,	1,492
Cockleroy (Cuckold le Roi), Linlithgowshire, 1½ miles SSW. of Linlithgow,	966
Binny Craig, Linlithgowshire, 5 miles SE. by E. of Linlithgow,	711
Dalmahoy Craigs, Edinburghshire, 3 miles W. by S. of village of Currie,	849
Corstorphine Hill, Edinburghshire, 3½ miles W. of Edinburgh,	470
Edinburgh Castle Rock,	434
Calton Hill, Edinburgh, summit	356
Base of the Astronomical Circle, Edinburgh Observatory, Calton Hill, N. Lat. 55° 57′ 20″, W. Long. 3° 11′ 40″	346
Palace of Holyrood, at the foot of the ridge on which the Old Town of Edinburgh is built,	118
Arthur's Seat, *Salisbury Craig*, } Skirting Edinburgh on the E.	822, 550
Blackford Hill, 2 miles S. of Edinburgh,	531
Buckstane, summit of the *Braid Hills*, 3 miles S. of Edinburgh,	690
The *Roman Camp* Heights,† Edinburghshire, summit 3 miles SE. of Dalkeith,	876
Traprain Law, Haddingtonshire, 4½ miles E. of Haddington,	700
North Berwick Law, Haddingtonshire, 1 mile S. of North Berwick,	940
The *Bass Rock* (Firth of Forth), Haddingtonshire, N. Lat. 56° 4′, W. Long. 2° 45′	400
Isle of May (Firth of Forth), Fifeshire, N. Lat. 56° 11′, W. Long. 2° 33′,	180
Inchkeith (Firth of Forth), Edinburghshire, N. Lat. 56° 9′, W. Long. 3° 8′, base of the lighthouse,	188

CHEVIOT HILLS AND THEIR BRANCHES,—

The Cheviots Proper,—

Cheviot, Northumberland, 7 miles SW. of Wooler,	2,658
Carter-Fell, Roxburghshire, 10 miles SSE. of Jedburgh,	1,502
Wisp-Hill, Dumfries-shire, 11 miles N. of Langholm,	1,940
Tudhope, *Millenwood-Fell*, *Wind-head*, } in the Liddesdale branch, in the SW. of Roxburghshire, and bordering on Dumfries-shire,	1,830, 2,000, 2,000

Lowther Hills,—

Ettrick Pen, Selkirkshire, 20 miles SW. of Selkirk,	2,258
Ward Law, Selkirkshire, 16 miles SW. by W. of Selkirk,	1,900
Whitecombe-Edge, Peebles-shire and Dumfries-shire, 16 miles SSW. of Peebles,	2,685
Hart-Fell, Dumfries-shire and Peebles-shire, 5 miles N. of Moffat,	2,635
Queensberry Hill, Dumfries-shire, 8 miles WSW. of Moffat,	2,259
Louther Hill, Lanarkshire, 2 miles SE. by S. of the village of Leadhills,	2,522

* This range is continued southward from the junction of Edinburgshire, Lanarkshire, and Peebles-shire, by a branch of the Lowthers—*which see*.

† These heights form part of a limestone and sandstone ridge, which commences on the west at the valley of the Gore Water, and extends along the north side of the valley of the Tyne into Haddingtonshire. To the eastward of Tranent, the ridge expands into a level, but somewhat elevated tract, called *Gladsmuir* (*i. e.* the gled's or hawk's moor), and afterwards unites with the trap hills of *Garleton* and *Byrie*, about 2 miles to the N. of Haddington.

CHEVIOTS AND THEIR BRANCHES (continued),—

	Feet.
Lowther Hills,—	
Village of *Leadhills* (the highest inhabited place in Great Britain), Lanarkshire, N. Lat. 55° 24′, W. Long. 3° 48′,	1,280
Tinto, Lanarkshire, 7 miles SE. of Lanark,	2,305
Culter-Fell, Lanarkshire, 5½ miles S. of Biggar,	2,440
Source of the River Tweed, in the S. of Peebles-shire,	1,500
River Tweed at Peebles,	500
Broad Law, Peebles-shire, 12 miles SW. of Peebles,	2,741
Windlestrae Law, Selkirkshire, 8 miles WNW. of Galashiels,	2,095
***Western Branches of the* Cheviots and Lowthers,—**	
Cairn-Kinnow, Dumfries-shire, 5 miles S. of Sanquhar,	2,080
Cairnsmuir of Deugh, Kirkcudbrightshire, 5 miles E. of Loch Doon, on the borders of Ayrshire,	2,597
Cairnsmuir of Fleet, Kirkcudbrightshire, 6 miles SW. of New Galloway,	2,329
Criffel Hill, Kirkcudbrightshire, N. Lat. 54° 54′, W. Long. 3° 39′,	1,830
Moorfoot Hills,—	
Jeffrie's Cross (summit of Dundroich, or Druid's Hill), Peebles-shire, 6⅞ miles N. by E. of Peebles,	1,970
Bowbeat Hill, Edinburghshire, 9 miles SSE. of the village of Pennycuik,	2,096
Blakeup-Scars, 8 miles SE. by S. of Pennycuik,	2,193
Ted's Cairns, Edinburghshire, 9 miles SE. by S. of Pennycuik, about	2,000
Lammermoor Hills,—	
Soutra Hill, Haddingtonshire, 11 miles SSW. of Haddington,	about 1,700
Lammer Law, Haddingtonshire and Berwickshire, 8 miles S. of Haddington,	
Dirrington Law, Berwickshire, 5½ miles W. by N. of Dunse, about	1,260
Mainslaughter Law, Berwickshire, 8¼ miles NW. by W. of Dunse,	1,260
Sparthedown Hill (highest peak of the Lammermoors), Haddingtonshire, 10⅛ miles SE. of Haddington, above	1,700
Dunse Law, Berwickshire, on the N. of Dunse,	630
Cockburn Law, Berwickshire, 4 miles N. by W. of Dunse,	900
Grant's Inn, parish of Coldingham, Berwickshire (summit level of a proposed railway between Edinburgh and Newcastle),	370
Meagle, or *Meg Hills* (trapean and detached), Selkirkshire, 2 miles W. of Galashiels,	1,480
Eildon Hills (trapean and detached), Roxburghshire, 1 mile S. of Melrose,	1,364

NORTHERN AND WESTERN CHAIN OF ENGLAND,—

	Feet.
Northern Range,—	
Hedgehope, Northumberland,	2,347
Summit level of Newcastle and Carlisle Railway, 49 miles W. of Newcastle,	*446
Kilhope Law, Durham, 17 miles W. by N. of Wolsingham,	2,196
Cross-Fell, Cumberland, 11 miles SSE. of Penrith,	2,909
High Pike, Cumberland, 8 miles NNE. of Keswick,	2,101
Skiddaw, Cumberland, 3 miles N. of Keswick,	3,022
Saddleback, Cumberland, 5 miles NE. of Keswick,	2,787
Helvellyn, Cumberland, 7 miles SE. of Keswick,	3,055
Pillar, Cumberland, 9 miles SW. by S. of Keswick,	2,893
Scu-Fell, Cumberland, 11 miles S. by W. of Keswick,	High point, 3,166 / Low point, 3,092
Bow-Fell, Cumberland, 10 miles S. of Keswick,	2,911
Black-Comb, Cumberland, 23 miles SSW. of Keswick,	1,919
Nine Standards, Westmoreland, 13 miles SE. of Appleby,	2,136
Grassmere-Fell, Westmoreland, 16 miles NW. of Kendal,	2,756
Whernside or *Wharnside*, in Ingleton-Fell, Yorkshire, West Riding, 13 miles NNW. of Settle,	2,384
Ingleborough, Yorkshire, W. R., 8 miles NW. by N. of Settle,	2,361
Pennigant Hill, Yorkshire, W. R., 6 miles N. by E. of Settle,	2,270
Whernside, in Kettlewell Dale, Yorkshire, W. R., 13 miles NE. of Settle,	2,263
Ronald's or *Rumble's Moor-Hills*, Yorkshire, W. R., between Skipton and Otley, highest point	1,308
Boulsworth Hill, Yorkshire, W. R., 10 miles NW. of Halifax,	1,689
Summit level of Great North of England Railway, 20 miles S. of Newcastle,	*224
——— Stockton and Darlington Railway,	†583
Pen Hill, Yorkshire,	2,245
Water Crag, Yorkshire,	2,186
Coniston-Fell, Lancashire, 8 miles N. of Ulverstone,	2,577
Pendle Hill, Lancashire, 10 miles E. of Lancaster,	1,803
Bleasdale Forest, Lancashire, 13 miles N. by E. of Preston,	1,709
Boulsworth Hill, Lancashire, 8 miles ENE. of Burnley,	1,689
Ricington Hill, Lancashire, 5 miles NW. by W. of Bolton,	1,345
Whittle Hill, Lancashire,	1,614
Summit level of North Union Railway, 10½ miles S. of Preston,	285
——— Liverpool and Manchester Railway,	215
Town of Rochdale, summit level of Manchester and Leeds Railway,	476
Summit level of Leeds and Selby Railway,	‡242
——— Hull and Selby Railway,	‡70
Lord's Seat, Yorkshire, W. R., SW. of Sheffield,	1,715
Holm Moss, Derbyshire, bordering on Cheshire and the W. R. of Yorkshire,	1,889
Kindercoat, Derbyshire, 11 miles N. by E. of Buxton,	1,800
Axedge Peak, Derbyshire, near Buxton,	1,753
Summit level of Cromford and High Peak Railway,	1,290
——— North Midland Counties Railway, 17¾ miles N. of Derby,	280
——— Grand Junction Railway at Wolverhampton,	444
Town of Birmingham,	365
Summit level of Midland Counties Railway, 5½ miles N. of Rugby, Warwickshire,	404
Town of Nottingham,	94
Summit level of Leicester and Swannington Canal,	561

* Above high-water in River Tyne. † Above low-water in River Tees,
‡ Above high-water in River Humber.

NORTHERN AND WESTERN CHAIN OF ENGLAND (continued),—

Cambrian Range,—

Penmaen-Mawr, Caernarvonshire, a little to the SW. of Conway,	1
Caern-y-Daríd, } Caernarvonshire, near the source of the Ogwen, {	3
Caern-y-Llewellyn, } 13 miles E. of Caernarvon, {	3
Snowdon, Caernarvonshire, 10 miles SE. of Caernarvon,	3
Bwich-Mawr, Caernarvonshire,	1
Gerryn-Goch, Caernarvonshire,	1
Rivel, Caernarvonshire,	1
Moel-Fammau, Denbighshire, 15 miles N. of Llangollen,	1
Cairn-y-Brain, Denbighshire, 5 miles N. by W. of Llangollen,	1
Moel-Morwith, Denbighshire, 5 miles NW. of Llangollen,	1
Cader-Feruyn, Merionethshire, 7 miles E. of Bala,	2
Arran-Fowdy, Merionethshire, 8 miles SSW. of Bala,	2
Arranig, Merionethshire, 10 miles SW. of Bala,	2
Cader-Idris, Merionethshire, 5 miles SW. of Dolgelly,	2
Pengarn, Merionethshire,	1
Lladinam, Montgomeryshire, 2 miles NE. of Llanidloes,	1
Plynlimmon (principal summit of the *Cerri Hills*), Montgomeryshire and Cardiganshire, 13 miles ESE. of Aberystwith,	2
Tregarron Down, Cardiganshire, 5 miles NE. of Tregarron,	1
Precella Top, Pembrokeshire, 14 miles NE. of Haverdford West,	1
Black Mountains, summit on the borders of Caernarvonshire and Brecknockshire,	2
Cappellante Mount, Brecknockshire, 8 miles SW. of Brecon,	2
Beacons of Brecknock, Brecknockshire, 4 miles SSW. of Brecon,	2
Cradle Mountain, 6 miles ENE. of Brecon,	2
Durggan, Brecknockshire, near Builth,	2
Llangeinor, Glamorganshire,	1
Hatteral Hills,	
Malvern Hills, highest summit,	1
Summit level of Birmingham and Gloucester Railway,	
Coltwold Hills,	
Radnor Forest, Radnorshire, N. of New Radnor,	2
Longmount Forest, Shropshire, 12 miles SW. by S. of Shrewsbury,	1

Devonian Range,—

Trevose Head, Cornwall,	
St. Agnes Beacon, Cornwall,	
Brown Willy, Cornwall,	1
St. Stephen's Down, Cornwall,	
Kit Hill, Cornwall,	1
Cawsand Beacon, a granite eminence, Devonshire,	1
Rippon Tor (High Tor?), Devonshire, 2 miles S. of Oakhhampton,	1
Furland, Devonshire, near Dartmouth,	
Dunkery Beacon, Somersetshire, 24 miles WNW. of Taunton,	1
Summit level of the Bristol and Exeter Railway, about 21 miles from Exeter,	*

RANGES IN THE SOUTH AND SOUTH-EAST OF ENGLAND,—

Inkpin Beacon, Hampshire,	1
Butser Hill, Hampshire,	
Portsdown, Hampshire, near Southampton,	
Motteston Down, Isle of Wight,	
Dunnose Head, Isle of Wight,	
Summit level of London and Southampton Railway, about 10 miles NNE. of Winchester,	†
Ditchelling Beacon, Sussex, 7 miles N. of Brighton,	
Firle Beacon, Sussex, 5 miles SE. by E. of Lewes,	
Crowborough Hill, Sussex, 7 miles NNE. of Uckfield,	
Beachy Head, Sussex,	
Fairlight Down, Sussex, 2½ miles ENE. of Hastings,	
Folkstone Turnpike, Kent,	
Hollingsbourn Hill, Kent, 6 miles E. by S. of Maidstone,	
Shooter's Hill, Kent, 1½ miles S. of Woolwich,	
Greenwich Observatory, Kent,	
Norwood, Surrey, 5 miles S. of London,	
Hindhead, Surrey,	
Leith Hill, Surrey,	
Summit level of Great Western (London and Bristol) Railway, near the River Thames at Moulsworth Bridge, Berks,	
Summit level of London and Birmingham Railway, near Tring, Hertfordshire,	
Highbeech, Essex,	

MOUNTAINS OF IRELAND,—

Monavullagh (Commergh Mountains), Waterford, N. Lat. 52° 10′, W. Long. 7° 33′,	2
Sheehy, Cork, N. Lat. 51° 45′, W. Long. 9° 7′,	1
Mount Gabriel, Cork, N. Lat. 51° 30′, W. Long. 9° 29′,	1
Hungry Hill, Cork, N. Lat. 51° 41′, W. Long. 9° 44′,	2
Cahirfarna, Cork,	2
The Paps, Kerry, N. Lat. 52° 1′, W. Long. 9° 14′	2
Mangerton, Kerry, N. Lat. 51° 59′, W. Long. 9° 28′,	2
Gurrane Tual (Magillicuddy Reeks), Kerry,	3
Brandon, Kerry, N. Lat. 52° 15′, W. Long. 10° 15′,	3
Seefin, Limerick, N. Lat. 52° 19′, W. Long. 8° 28′,	1
Knockmeledown Mountains, Tipperary, probably	2
Galtymore (Galtee Mountains) Tipperary, N. Lat. 52, 22′, W. Long. 8° 4′,	3
River Suir, above Cahir,	
Multeen River, about 6 miles N. of Tipperary,	
Slievenaman, Tipperary, N. Lat. 52° 25′, W. Long. 7° 30′,	2
Devil's Bit, Tipperary, N. Lat. 52° 50′, W. Long. 7° 50′,	1
Keeper, Tipperary, N. Lat. 52° 45′, W. Long. 8° 12′,	2
Slieve Bloom Mountains, Queen's County,	1

* Above Floating Harbour, Bristol. † Above high-water in the River Thames.

MOUNTAINS OF IRELAND (continued),—	Feet.
Callaun, Clare, N. Lat. 52° 53′, W. Long. 9° 15′,	1,288
Knockmeas, Clare,	1,305
Craig, Clare,	1,715
Lough Derg,	98
Twelve Pins, Galway (highest summit), N. Lat. 53° 31′, W. Long. 9° 48′,	2,396
Beinnoosire, Galway,	2,337
Muilrea, Mayo, N. Lat. 53° 37′, W. Long. 9° 47′,	2,680
Croaghpatrick, Mayo, N. Lat. 53° 47′, W. Long. 9° 38,	2,499
Croghaun, Mayo, on the W. side of Achil Island,	2,250
Slievemore, Mayo, on the S. side of Achil Island,	2,184
Cliffs to the E. of Achil Head,	900
Cliffs to the N. of Achil Head,	1,800
Nephin, Mayo, N. Lat. 54° 3′, W. Long. 9° 18′,	2,639
Slievebon (South), Roscommon,	857
Slievebon (North), Roscommon, N. Lat. 53° 44′, W. Long. 8°,	839
Carnclonhugh, or *Cairn-a-Clonhugh*, Longford, N. Lat. 53° 47′, W. Long. 7° 42′,	912
Slievanierin, Leitrim, N. Lat. 54° 5′, W. Long. 7° 56′,	1,922
Lackagh, Leitrim,	1,448
Truskmore, Sligo,	2,113
Benbulbin, Sligo, N. Lat. 54° 21′, W. Long. 8° 19′,	1,657
Cuilcagh, Cavan, N. Lat. 54° 12′, W. Long. 7° 47′,	2,188
Belmore, Fermanagh,	1,312
Carnmore, Fermanagh,	1,034
Slieveleague, Donegal, N. Lat. 54° 36′, W. Long. 8° 43′,	1,965
Cliffs to the N. of Rossan Point, the SW. extremity of Donegal,	760
Bluestack, Donegal, N. Lat. 54° 45′, W. Long. 8° 4,	2,213
Errigal, Donegal, N. Lat. 55° 3′, W. Long. 8° 5′,	2,462
Muckish, Donegal, N. Lat. 55° 6′, W. Long. 7° 55′,	2,190
Slievemaght, Donegal, N. Lat. 55° 12′, W. Long. 7 18′,	2,019
Sawell (Carntogher Mountains), Londonderry, N. Lat. 54° 50′, W. Long. 7°,	2,236
Benbradagh, Londonderry, N. Lat. 54° 49′, W. Long. 6° 45′,	1,530
Carntogher, Londonderry, N. Lat. 54° 52′, W. Long. 6° 39′,	1,521
Slievegallion, Londonderry, N. Lat. 54° 45′, W. Long. 6° 45′,	1,730
Knocklayde, Antrim, N. Lat. 55° 10′, W. Long. 6° 47′,	1,685
Benmore, or *Fair Head*, the NE. point of Antrim,	626
Throstan, Antrim, N. Lat. 55° 3, W. Long. 6° 10′,	1,810
Slemish, Antrim, N. Lat. 54° 53′, W. Long. 6° 7′,	1,437
Divis, Antrim, N. Lat. 54° 37′, W. Long. 6° 3′,	1,568
Loch Neagh,	48
Slievecrooh, Down, N. Lat. 54° 19′, W. Long. 5° 58′,	1,755
Slieve bingian, Down,	2,449
Slievedonard (Mourne Mountains), Down, N. Lat. 54° 11′, W. Long. 5° 55′	2,796
Eagle Mountain (Mourne Mountains), Down, N. Lat. 54° 8′, W. Long. 6° 7′,	2,084
Slievegullion, Armagh, N. Lat. 54° 7′, W. Long. 6° 24′,	1,893
Carlingford, Louth, N. Lat. 54° 3′, W. Long. 6° 12′,	1,935
Hill of Howth, Dublin County, on the N. side of the entrance to Dublin Bay,	549
Bray Head, Wicklow,	807
Kippure, Wicklow, N. Lat. 53° 11′, W. Long. 6° 19′,	2,473
Great Sugar Loaf, Wicklow, N. Lat. 53° 9′, W. Long. 6° 8′,	1,651
Lugnaquilla, Wicklow, N. Lat. 52° 57′, W. Long. 6°, 30′,	3,039
Bog of Allen, Kildare, source of the Boyne and Little Barrow rivers, highest point	300
Summit level of the Grand Canal which passes through the Bog of Allen,	275
River Nore, below Castleton,	394
Mount Leinster, Carlow, N. Lat. 52° 38′, W. Long. 6° 43′,	2,604
Brandon, Kilkenny, N. Lat. 52° 29′, W. Long. 6° 58′,	1,696
*Summits and other Levels of Proposed Railways.**	
Main Trunk Line—(Dublin to Holycross),—	
Terminus at Dublin,	43
Level at Miltown, beyond the Bog of Allen, Kildare county,	293
Maryborough summit, Queen's County (at junction of line from Kilkenny),	345
Summit level, bog near Borros-in-Ossory, Queen's County,	400
Holycross, Tipperary,	307
Shannon line—(Holycross to Tarbert),—	
Multeen river, Tipperary,	324
Junction of line from Waterford and Clonmel, at Donaghill, near town of Tipperary,	309
Town of Limerick,	41
Terminus at Tarbert Bay, mouth of the river Shannon,	10
Cork line—(Holycross to Cork),—	
Crossing of the line from Limerick to Waterford, between Cashel and Cahir,	268
Summit level near Ballyhillogue, 13½ from Cork,	400
Terminus at Cork Barracks,	200
Cork Harbour,	30
Beerhaven line—(Blarney to Beerhaven,)—	
Level at Blarney, Cork county,	236
Summit level, Pass of Cummineer, near the head of Bantry Bay, Cork,	469
Terminus at Beerhaven, on the N. side of the entrance to Bantry Bay,	22
Limerick and Waterford line—(Tipperary to Clonmel),—	
Summit level, Donaghill, near Tipperary, at the junction of the line from Dublin to Limerick,	309
Level near Clonmel,	104
Kilkenny line—(from Maryborough summit to Kilkenny),—	
Maryborough summit at Ross Bog (see Main Trunk line),	345
Terminus at Kilkenny Barracks,	169
Dublin and Armagh line,—	
Terminus at Dublin,	106
Summit level at Castleblaney, Monachan,	409
Terminus at Armagh city,	170

* The heights are above the top of a 12-foot tide in Dublin Bay.

MOUNTAINS OF IRELAND (continued),—	Feet.
Navan and Inniskillen line,—	
Navan level, at junction with Dublin and Armagh line,	167
Summit level, between Virginia and Cavan, Cavan county,	400
Terminus at Inniskillen, Fermanagh,	196
SUMMITS IN THE WESTERN AND NORTHERN ISLAND GROUPS,—	
North Berule, Isle of Man, 11 miles N. of Douglas,	1,804
Snea-Fell, Isle of Man, 9 miles N. of Douglas,	2,004
Goat-Fell, Island of Arran, Buteshire, ½ mile NW. by N. of Brodick,	2,865
Paps of Jura, Island of Jura, Argyllshire, { South summit,	2,359
{ North summit,	2,470
Benmore, Island of Mull, Argyllshire,	3,168
Cuchullin, Isle of Sky, Inverness-shire,	2,995
Sea-cliffs on the SW. coast of Sky,	750
Highest point of the *Mainland*, or principal *Barra Isle*, Inverness-shire,	2,100
Highest point of *Mingala Isle*, }	900
——— *Sandera Isle*, } Barra Isles, Inverness-shire,	780
——— *Muldonich Isle*, }	600
Mount Heckla, Island of South Uist, Inverness-shire,	2,940
Mount Heval, in the SE. of North Uist, Inverness-shire,	2,010
Roneval, in the S. of Harris, Inverness-shire,	2,200
Conachan, Island of St. Kilda, Inverness-shire,	1,380
Clisseval, in the S. of Lewis, Ross-shire,	2,700
Suaneval, in the SW. of Lewis,	2,700
Highest point of *Scarpa Isle*, off the SW. point of Lewis,	990
——— *Hoy Island*, Orkney Isles,	1,590
——— *Fair Isle*, between the Orkney and the Shetland groups,	708
Mount Rona, in the N. of Mainland Isle, Shetland Islands,	1,470
Highest point of Foula Island, off the W. coast of Mainland, Shetlands,	1,350
Slatterind, Stromöe Island, Færoe Isles,	2,998

AÇORIAN OR WESTERN SYSTEM. — This little insular system includes all the mountains in the islands which form the group of the Açores or Azores. These islands are by many geographers included among the African; but in this work we have deemed it proper, following the example of M. Balbi, to consider the group as a political and geographical dependency of Portugal.* The culminating points of this system are the *Grand Pico* in the island of Pico, the altitude of which is 8,057 feet, and the *Pico de Vara* in the island of St. Miguel which reaches an elevation of 5,336 feet.

BOREAL SYSTEM. — A name under which we propose to include the mountains found in the Spitzbergen group of islands. The principal culminating points, and their respective heights, are, — *Black Point*, 4,495 feet, and *Mount Parnassus*, 3,951 feet, both in the main island called Spitzbergen or New Friesland, and the *Honberg*, 4,399 feet, in Charles Island.

Induced by a consideration of the importance of orographic details in enabling us to comprehend the general aspect of a region or country, and the circumstances which regulate or modify its climate and productions, we have thus at great length, and with some degree of minuteness, described the various European mountain ranges. The heights stated in the preceding tables are all reckoned from the *level of the sea*. To have given the name of the authority for each statement, would have merely incumbered the pages of a work like the present, without producing any adequate counterbalancing advantages.

TABLE-LANDS OR PLATEAUX. — Some of these elevated tracts of land have been mentioned in the preceding section. The most considerable in point of extent is the table-land of *central Russia*; but its elevation is not great, since, even in the neighbourhood of the source of the Volga, it does not attain a greater height than from 1100 to 1150 feet. Then follow the table-land of *central Spain*, about 2200 feet in height; the table-land of *Switzerland*, between the Alps and the Jura mountains, 2240 feet; that of *Auvergne*, 2300 feet; of *Piedmont*, from 640 to 1900 feet; of *Jura*, from 1700 to 1900 feet; of *Bavaria*, 1660 feet; and that of *Thuringia* from 640 to 770 feet.

VOLCANOES.—There is only one active volcano on the continent of Europe, namely *Vesuvius* or *Monte Vesuvio*, near Naples; but as a considerable warmth is still felt at the bottom of the crater of *Monte Nuovo*, in the Bay of Baia to the west of Naples, a mountain which was thrown up by an irruption in the year 1530, the latter may still be considered a recent volcano. The islands of Europe contain several; the principal of which are, *Ætna* or *Monte Gibello*, in Sicily, and *Stromboli*, *Vulcano*, and *Vulcanello*, in the group of the Lipari Islands. Stromboli is the least elevated known volcano, and is singularly interesting from the permanency of its phenomena. The little island, *Ferdinandine*, which was thrown up by an eruption near the coast of Sicily in 1833, had only a short existence of a few months duration. *Ischia*, off the coast of Naples, has been in a quiescent state since the 14th century; but hot springs and sulphureous vapours still rise from many points of the surface of the island. *Santorini*, in the Grecian Archipelago, was in a state of eruption in the year 1707, and numerous smaller islands and rocks have been at different periods

* See foot-note to p. 137.

thrown up in the vicinity of the principal island. *Milo*, though the epochs of its eruptions are unknown, is a volcano of recent aspect, emitting sulphureous and amoniacal vapours from its central crater, and streams of boiling water from several points. The *Açores* are uniformly of volcanic constitution. Numerous sub-marine volcanoes exist in their vicinity, whose eruptions have in some instances produced new islands, such as the island which appeared in 1720 between Terceira and St. Miguel, and that which in 1811 was seen by the captain of the Sabrina frigate, forming at a little distance from the latter island. The cone of the latter was elevated 300 feet above the sea, and contained a crater 500 feet in diameter. These islands being solely composed of fragmentary ejections, have since gradually yielded to the action of the waves and currents, and become shoals below the water level. But the great volcanoes of the Açores are those of *Pico* and *St. George*, in the islands of the same names. The former broke out in eruption in 1718, but has been tranquil ever since. *Sarytcheff*, in the north island of Nova Zembla, is the most northern of all the volcanoes presently known.*

VALLEYS and PLAINS. — The valleys of Europe are naturally less extensive than those of Asia, Africa, and America. The two largest are the valley of the *Lower Danube*, comprehending the plains of Wallachia and Bulgaria, and the valley of the *Middle Danube*, which forms the kingdom of Hungary. The magnificent valley of the *Pô* ranks third in point of size. Those of the *Rhine* between Bâle and Mentz, of the *Upper Rhône* in Switzerland, of the *Drave* in Carinthia, are remarkable for their extent and beauty. The valleys of *Norway* and of *Scotland* present the peculiar feature of a long and narrow basin, frequently containing a lake of a corresponding shape. Of the other valleys which the mountainous regions of Europe present to our view, we may mention the fine valleys of *Savoy*, *Brescia*, *Bergamo*, and *Tyrol* in the Austrian empire; those of the cantons of *Berne*, *Tessin*, *Uri*, &c. in Switzerland; of *Arragon*, *Catalonia*, *Navarre*, and *Granada*, in Spain; of *Beira* and *Tras-os-Montes*, in Portugal; of *Dauphiny*, the *Upper* and *Lower Pyrenees*, the *Eastern Pyrenees*, and *Ariège* in France. But the most remarkable plain of Europe is that level tract which extends from the shores of the German Ocean to the Ural mountains and the Caspian Sea, and comprehends the Netherlands, Northern Germany, Prussia, Poland, and the greater part of Russia, rising nowhere more than a few hundred feet above the level of the sea.

DESERTS, STEPPES, and LANDES.—Although Europe presents no tract of any considerable extent that may properly be called a desert, yet infertile plains, for the most part sandy, occur in several places. These are known by the name of *landes* in France, *steppes* in Russia, *putvens* in Hungary, &c. The most extensive are found in Russia, which presents among many others the *Steppe of Ryn*, between the Volga and the Oural; the *Steppe of the Oural*, between that river and the Don; the *Steppe of the Crimea*, and the *Steppe of Petchora*. Next to the steppes of Russia, the most remarkable tracts of a similar description occur in Norway and Sweden, especially in *Norland*, *Lapland*, and *Wester Gothland*. There are several in the Austrian dominions, especially in *Hungary*, where they are very extensive. They occur also in the neighbourhood of *Stade*, *Hanover*, *Luneburg*, and *Zell*, in the kingdom of Hanover; at *Hamburg*; and in *Pomerania* in Prussia; and they occupy the greater portion of the surface of the departments of the *Landes* and the *Gironde* in France. Similar tracts are found in the Neapolitan province of *Terra di Bari*.

CLIMATE. — Did the temperature of Europe depend merely on the action of the solar rays, England would be as cold as Poland, and France as Germany. To the south of the 45th parallel, the progression of the heat would be rapid, and its relaxing effects felt in an extreme degree at Constantinople, Naples, and especially at Madrid. Three great physical causes, however, concur in modifying the results of the astronomical climate. These are, 1*st*, The *cold* or *diminution of temperature* produced by the vicinity of northern Asia in all the countries exposed to the chilling winds which come from the polar sea across the frozen plains and mountains of Siberia; 2*d*, The *heat* produced by the vicinity of Africa in those countries which, lying nearest that portion of the world, feel in a greater degree than others more remote, the influence of the hot winds proceeding from its burning deserts; 3*d*, The *sudden changes produced in the temperature* of the countries of Europe which slope towards the Atlantic Ocean and its branches, by the winds which sweep over that

* Messrs. Scrope and Daubeny on Volcanoes; Balbi's Abrégé, &c.

wide expanse of water. Taking these three general causes in combination with the direction of the mountain chains, and the exposure and elevation of the soil, we are enabled to recognise in Europe *three general climates*, which may be represented by the three sides of a triangle, having its three points resting upon Cape St. Vincent in Portugal, North Cape in Finmark, and the northern shore of the Caspian. The line between Cape St. Vincent and North Cape may be named the *Oceanic side* of this triangle; that which unites North Cape to the northern extremity of the Caspian, the *Asiatic side*, and the remaining line between the Caspian and Cape St. Vincent, the *Southern side*. In winter the temperature diminishes as we proceed from south to north along the oceanic side, while on the southern side its decrease is (with a few irregularities arising from local causes) from west to east. In winter the degree of cold remains nearly the same throughout the length of the Asiatic side. The warmth of summer is regulated by other general laws. Throughout all the northern region it is augmented by the length of the days, although on the oceanic side this increase of heat is moderated by the influence of the uniform temperature of the sea. On the Asiatic side the summer heat is felt to be oppressive, especially when contrasted with the rigorous cold experienced during the winter. On the southern or Mediterranean side of the triangle the summer heat varies in a singular manner, according to the winds and other local causes, but the temperature generally diminishes as we proceed eastward.

Europe may also be divided into three parallel zones, which, making allowance for the influence of the causes we have already mentioned, will indicate, in a manner sufficiently accurate, the limits of the principal variations of climate experienced in this portion of the world. The *southern zone* or *climate* extends from latitude 35° to 45°. Within the space which it comprehends, the cold is slight and of short duration. The spring commences in January or February, the summer in April or May, and the winter lasts during October and November; so that the year is divided into three seasons, namely, an agreeable spring, a summer, the heat of which reaches 106°, and the south of France, all belong to this region. The *middle zone*, or *temperate* and a winter, short and invariably rainy. Greece, southern Turkey, Italy, Spain, *climate*, is included between lat. 45° and 55°. The spring of this zone commences in March or April; the summer, the temperature of which reaches 90°, lasts from June to September; and the winter commences in November. Thus, four seasons of unequal duration are experienced in the temperate zone. The winter is the longest, and the autumn the shortest of the seasons. Two thirds of France, the whole of Germany, and the half of European Turkey, are under the influence of this climate. The *northern climate* extends over the remaining portion of the regions of Europe. From the latitude 55° to 65°, the winter augments in rigour and duration, and beyond the Polar circle the cold becomes so intense as the year advances, that mercury is reduced to a solid state in the month of September. In the northern portion of this zone, the severities of a long winter (lighted up, however, by the magnificent spectacle of the aurora borealis, the splendour of which replaces the presence of the solar luminary,) are succeeded by a hot summer of three months' duration, in the course of which the sun never sinks below the horizon. There are two subdivisions of this zone: The first includes Denmark, European Russia from Moscow to the White Sea, and the greater part of Sweden and Norway; the second comprehends the north-eastern portions of Russia, the whole of Russian and Swedish Lapland, and the northern portion of Norway. As the climates of the islands require a separate consideration, their places will be found in our special descriptions.

We shall conclude this brief statement by a few remarks on the humidity and mean temperature of certain parts of Europe.

The *humidity of the atmosphere* divides Europe into regions, the characters of which are not less distinctly marked than those derived from temperature. According to the estimate of Professor Schow, the quantity of rain which falls annually to the north of the Alps is equal to 26 inches, while to the south of that chain the quantity is 37 inches.* A statement of this kind, however, can only be but approximate; and besides, we must take into account that a greater quantity of snow falls to the north than to the south of the Alps. It has also been remarked, that in the northern region the number of rainy days is from 150 to 160 annually, while in the south their amount is only from 90 to 100. It may be useful to present in a single table the results of some observations which have been made relatively to the quantity of rain that falls during the year in the principal countries of Europe.

* Parallèle du nord et du midi de l'Europe, par M. Schow.

		Engl. In.			Engl. In.
SWEDEN	Upsal,	16.92	FRANCE	Paris,	21.26
RUSSIA	St. Petersburg,	18.11		Colmar,	29.92
ENGLAND	London,	22.7		Rennes,	22.44
	Manchester,	33.07		Lyons,	33.07
	Liverpool,	33.85		Limoges,	29.16
	Dover,	37.4		Grenoble,	34.25
	Keswick,	67.		Montpellier,	29.92
SCOTLAND	Edinburgh,	22.	ITALY	Milan,	37.
	Glasgow,	23 32		Venice,	31.89
HOLLAND	Utrecht,	28.74		Padua,	39.76
	Leyden,	31.49		Tolmezzo (Friuli),	86.61
GERMANY	Wurtemberg,	17.71		Pisa,	48.52
SWITZERLAND	Zurich,	33.85		Genoa,	55.11
	Geneva,	51.18		Rome,	21.26
FRANCE	Lisle,	29.92		Naples,	37.40
	Metz,	26.37		Confugnana (Apennines),	97.21
	Caen,	21.65	SPAIN	Carsagnana,	98.07
	Evreux,	21.65			

To the north of the Alps, the *mean temperature* varies from 47° to 50° Fahr., and in northern Europe it is lower in the east than in the west. Thus, at St. Petersburg the mean temperature is 38° or 39°, while at Upsal it is about 42°. The *difference between the temperature of summer and winter* is, in the neighbourhood of the Arctic Ocean, 55°, in Tuscany it is only 29°, and at Palermo, 20°. In the latter city, the temperature rises only about 6° from April till May, while at Upsal it rises 9° in the same interval.

MINERALS. — The European mines of gold, silver, and precious stones, are but few in number, and limited in produce; but, on the other hand, this portion of the globe is enriched by an almost inexhaustible supply of iron, lead, copper, tin, coal, and salt. To these we may add the produce of its mines of quicksilver, without the aid of which, the gold and silver mines of the new world, wrought during the 17th and 18th centuries, and early portion of the 19th, could not have obtained their high importance and value. In the following tabular view of the principal mineral productions of Europe, M. Balbi has endeavoured, in reference to each article, to state the countries in which it is found in the order of the comparative extent of their mineral wealth.

Mineralogical Table of Europe.

DIAMONDS: — *Russia* — Government of Perm.

OTHER PRECIOUS STONES: — *Austria* — Bohemia, Hungary, and Transylvania; *Saxony*.

GOLD: — *Russia* — Governments of Perm and Orenburg; *Austria* — Transylvania, Hungary, Saltsburg, &c.; *Sardinia* — Piedmont, &c.

SILVER: — *Austria* — Hungary, the Bannat Bohemia, Transylvania, &c.; *Saxony* — Erzgebirge; *Hanover* — Harz; *Turkey* — Macedonia, Albania, Bosnia, &c.; *Prussia* — Provinces of Saxony, Rhine, &c.; *England*—Cumberland, Derbyshire, Flintshire. &c.; *France*—Finistere, Lozère, and Vosges; *Sweden and Norway*—Buskerud, in Norway,—Westeras and Stora-Kopparberg, in Sweden; *Nassau*; *Sardinia* — Savoy.

TIN: — *England* — Cornwall and Devonshire; *Saxony*; *Austria* — Bohemia.

QUICKSILVER: — *Spain* — Mancha; *Austria* — Carniola, &c.; *Bavaria* — Rhine, &c.

COPPER: — *Great Britain and Ireland*—Cornwall, Anglesea, and Devonshire, in England,—Cork and Waterford, in Ireland; *Russia*—Perm, &c.; *Austria*—Hungary, the Bannat, the Bellunese, Styria, &c.; *Sweden and Norway*—Sondre-Trondheim, in Norway,—Stora-Kopparberg, Lindkoping, and Westeras, in Sweden; *Turkey* — Macedonia, &c.; *Prussia* — Rhine, &c.; *Spain*—Andalusia, &c.; *France* — Rhône, Upper Rhine, and Lower Pyrenees; *Hanover*, &c.

IRON: — *Great Britain*—South Wales, Staffordshire, Shropshire, Yorkshire, &c. in England,—Lanarkshire, &c. in Scotland; *Russia*—Perm, Orenburg, Tambov, Nishnei-Novgorod, Kalouga, Olonetz, Vlatka, &c.; *France* — Upper Marne, Côte-d'Or, Meuse, Nièvre, Upper Saône, Moselle, Meurthe, Ardennes, Doubs, Jura, Ariège, &c.: *Prussia* — Silesia, Rhine, Brandenburg, &c.; *Sweden and Norway* — Orebro, Stora-Kopparberg, Carlstad, Jeffleborg, Westeras, Jonkoping, Upsal, &c. in Sweden,—Smaalehnene and Laurwig, in Norway; *Austria*—Styria, Carinthia, Hungary, the Bannat, Bohemia, Transylvania, government of Milan, &c.; *Tuscany*—Island of Elba; *Spain*—Catalonia, Aragon, Navarre, Biscay, Asturias, Granada, &c.; *Turkey*—Bulgaria, Bosnia, and Macedonia; *Bavaria*; *Sardinia* — Piedmont, &c.; *Nassau*, &c.

LEAD: — *Spain* — Granada, Andalusia, Catalonia, &c.; *Great Britain and Ireland* — Denbighshire, Flintshire, Cumberland, Northumberland, Yorkshire, Derbyshire, in England, — Lanarkshire and Dumfries-shire, in Scotland, — Wicklow, Clare, Wexford, Armagh, and Donegal, in Ireland; *Austria* — Carinthia, Hungary, Bohemia, &c.; *Prussia* — Silesia, Rhine, &c.; *Hanover*; *France* — Finistère, &c.; *Nassau*; *Saxony*; *Sardinia* — Savoy, Island of Sardinia, &c.

ZINC: — *England*; *Belgium*; *Prussia* — Silesia; *Austria* — Carinthia.

COAL: — *Great Britain and Ireland* — South Wales, Northumberland, Durham, Yorkshire, Derbyshire, Lancashire, Cumberland, Flintshire, &c. in England and Wales,—Midlothian, Lanarkshire, Fifeshire, &c. in Scotland,—Tyrone, Antrim, Leitrim, Kilkenny, Cork, &c. in Ireland; *Belgium*—Mons, Namur, Liège, &c.; *France* — Nord, Loire, Upper Loire, Calvados, &c.; *Prussia* — Silesia, Westphalia, Rhine, &c.; *Austria* — Bohemia, Hungary, Lower Austria, Styria, Moravia, &c.

SALT (rock-salt, and that derived from brine-springs and the sea): — *Russia* — Saratow, Perm, Taurida, Astrakhan, Bessarabia, &c.; *Austria* — East Hungary, Upper Austria, with Saltzburg, Tyrol, Venice, Dalmatia, Triest, &c.; *France* — Charente-Inférieure, Meurthe, Jura, Loire-Inférieure, Vendée, Garde, &c.; *Spain* — Catalonia, Granada, Navarre, Seville, Valencia, Iviça, &c.; *Great Britain and Ireland* — Cheshire, Worcestershire, Staffordshire, Norfolk, Kent, Fifeshire, the Lothians, Munster, Ulster, &c.; *Portugal* — Setubal, Lisbon, Figueira, &c.; *Prussia* — Saxony, Westphalia, Pomerania, &c.; *Principalities of Wallachia and Moldavia*; *Sardinia* — Island of Sardinia and Genoa; *the Two Sicilies* — Calabria, &c.; *Bavaria* — Isar, &c.; *Papal States* — Forli, &c.; *Sweden and Norway* — Smaaland, Bohus, &c. in Sweden,—Tonsberg, &c. in Norway; *Ionian Isles* — Santa-Maura, &c.; — *Greece* — Island of Naxos, &c.

At the commencement of this century, America produced eleven times the quantity of silver at present derived from the mines of Europe; and the quantity of gold which it yielded was also much greater than that which Europe then produced. Since that period the produce of the American gold mines has somewhat diminished in quantity, and it is now less than that derived from the mines of Europe in their present extended state. Russia alone, since the recent discovery of new minerals of gold and platina in the Ourals, produces six-sevenths of the whole quantity of gold produced in Europe. Hungary and Transylvania yield nearly the remaining seventh. England, which is so rich in the common metals, produces but an insignificant quantity of those of a precious description. England furnishes nearly a third part of the whole quantity of iron made in Europe. Of the remainder, about a fourth part is made in Russia, a fifth in France, and a tenth in Sweden. The iron of Russia and Sweden is very superior in quality, and well adapted for the fabrication of steel. England and France produce iron of various qualities, from the best to the most inferior. The iron, for ordinary purposes, made in England, has long been noted for its cheapness; but the best descriptions of English iron bring prices nearly as high as the finest Swedish. Five-sixths of the total quantity of cast-iron consumed in Europe, for the fabrication of machinery of all kinds, culinary utensils, &c. comes from the iron manufactories of Britain; about a tenth only from those of France, and a fortieth from the founderies of Prussia. Very few castings are made in Russia and Sweden. It is remarkable that the produce of the iron mines, notwithstanding the slight intrinsic value of the metal, represents more than three-fourths of the value of the produce of the European mines of every description, and that the produce of the gold, silver, and platina mines only a ninth part of that value. One half of the lead consumed in Europe has been (at least until lately) brought from Spain, and three-sevenths from England. France, and even Germany, produce, in proportion to their extent, but little of this metal. England produces ten times as much coal as France, and about a half more than the quantity produced in the latter is yielded by the mines of Belgium and Prussia.. About twelve-thirteenths of the European tin is derived from English mines. England also furnishes nearly a half of the copper produced in Europe; about a fifth of the total quantity is procured from the Russian mines, and a tenth from those of Sweden. In France, copper is found only in trifling quantities.

VEGETATION. — Referring our readers to the first section of the fourth chapter of this work (see *anté*, p. 88,) for an explanation of the natural causes which regulate generally the geographical distribution of vegetables, we proceed to give, although very briefly, considering the extent and importance of the subject, some account of the vegetable productions of this portion of the globe.

The triangle of climates proposed by Malte-Brun, of which we have given an explanation in the preceding section but one, will assist us in distributing the vegetable productions of Europe into three great series. Proceeding northward along the oceanic side of the triangle, we find, from Cape St. Vincent in Portugal, as far as Cape Finisterre in Spain, a vegetation springing up beyond the sandy *landes*, which presents at once to the botanist a great number of plants analogous to those found in the Açores, and others of American origin, taking so kindly to the soil of these coasts, and multiplying with so much facility, as to invade extensive tracts to the exclusion of the indigenous vegetation. Beyond latitude 40°, the orange, olive, and vine, occupy the lower regions, and are overlooked by the oak and chesnut. From Cape Finisterre to the south-eastern extremity of the Bay of Biscay, and even to the source of the Adour, the narrow plains extending to the foot of the Pyrenees are characterised by the absence of the cistus, or rock-rose, and the rose-laurel, the difficulty of rearing the orange, olive, and vine, and the ease with which the culture of the apple is extended. These peculiar features of the vegetation of this region have induced a French naturalist to name it the *Normandy* of the Spanish peninsula. From the point of the Bay of Biscay now mentioned, the coast, as far as the mouth of the Loire, is still bordered with the maritime pine. The vines growing on the banks of the Gironde yield excellent wines, and the myrtle grows in the open fields. The melon, which calls for so much attention in the neighbourhood of Paris, scarcely requires culture on the shores of the Atlantic and of the Channel. From the mouths of the Meuse, as far as those of the Ems, lint and madder are successfully cultivated; and the ash, alder, and birch, thrive on the Danish coast. In Norway several species of poplar disappear in approaching the 60th parallel, and the oak about two degrees farther north, but the beech and the lime are prolonged as far as the 63d parallel, from which point to latitude 67° they are replaced by the pine and fir. At the 70th parallel, barley and oats are the only kinds of grain which resist the rigour of the climate.

The farther we remove from the coast, the influences which bring about the gradations we have remarked in the oceanic region are diminished. On the Asiatic side of the triangle, several plants which grow in high northern latitudes on the side of the ocean disappear in the plains of Russia, though farther south. On the other hand, plants common to the Scandinavian peninsula and Lapland are propagated on the shores of the Baltic. Thus the rein-deer lichen is frequently met with in the plains under latitude 54°. The oak and hazel cross the 60th parallel only in small groups and in favourable situations. The ash extends only as far as the 62d degree. Oaks are thinly distributed over the central provinces of Russia, but they thrive in descending towards the 52d parallel, and under the 55th are both numerous and beautiful. The beech known in Livonia disappears in the vicinity of Smolensk, and to the south of Moscow the lime and birch are the most common trees. The birch predominates in the forests which cover the inferior declivities of the Oural chain, and in the higher region the pine or the fir. In the plains are seen the elm, lime, maple, service, and plum-tree.

On approaching the shores of the Caspian, the influence of the climate of northern Asia ceases. In the Ukraine grain of every description thrives, there is an abundance of fruit trees, the mulberry succeeds in small plantations, and the forests furnish choice oaks for naval purposes. At length, towards the Don, and near the mouth of the Volga, large trees disappear, and tufts of shrubs and saline plants cover the sandy plains.

The base of the triangle of European climates presents several remarkable peculiarities, which we shall now examine, proceeding for that purpose from east to west. Towards the mouth of the Danube the low hills are covered with the apple, pear, cherry, plum, and apricot. In Wallachia these fruit trees appear in entire forests. They overleap the chain of the Balkan, and ornament some of the high hills of Roumelia, ancient Macedonia, and Albania. As far as the 40th parallel the olive and orange are found only on the sea-shore, but the mountains are crowned with varied forests, where the pine, fir, cedar, oak, beech, walnut, chesnut, maple, sycamore, and oriental plane, occur in succession. To the south of the 40th parallel, vegetation assumes another aspect; the apple and pear disappear, and are replaced by the olive, orange, fig, and black mulberry, which mingle their foliage with the scarlet blossoms of the pomegranate, and their sweet exhalations with those of the myrtle and jasmine. On the shores of the narrow strait of Constantinople some northern vegetables grow side by side with others belonging to the south. The vines of Salonika yield excellent wine, and aromatic plants in vast variety still furnish the bees of Attica with the juices which in ancient times conferred such celebrity on their honey. The valleys and shores of Albania present a great analogy to the most temperate portion of Italy. Before the rivers are dried up by the heat of summer, the valleys situate below the forests of resinous trees which cover the chain of Pindus, are seen ornamented with clusters of elder-bushes, and the meadows are overspread with the violet, narcissus, and hyacinth. An enchanting spectacle is presented by the southern region of Italy. The forests of olive, almond, and fig-trees, the majestic cypresses, and the golden fruits of the orange and citron, disclose a new aspect of nature. The shores of the basin formed by the coasts of Tuscany, Genoa, Nice, and the southern shores of France, present a magnificent amphitheatre, ornamented with four zones of vegetation. In the lowest zone, which rises about 330 feet above the level of the Mediterranean, we notice first the glass-wort or soda plant, sea eryngo and echinophora, or prickly samphire, then the Bourbon-palm, the tree-tithymal or spurge, the three-grained cneorum or widow-wail, and the silky lotus or bird's foot trefoil. The second zone produces the rose-laurel, orange-trees of every species, the plane, and the European lotus, while at the foot of those trees, jasmines, pomegranates, jonquilles, and tuberous plants unite their splendid blossoms and delightful perfumes. The third zone is occupied by the olive, fig-tree, vine, laurel, and arbutus or strawberry-tree. Lastly, in the fourth zone, towards the summits of the mountains, are found only the carob-tree, cistus, pine, and rosemary shrub, the last growing spontaneously in the fissures of the rocks. On the eastern slopes of the Spanish peninsula we again meet with the vegetation of Greece and Italy; the olive thrives as far as Cape Palos, the carob and mastick trees are seen growing in company, the laurel, fig, pomegranate, and mulberry display their varied foliage, and the vine yields a strong and highly coloured wine. A region, which may be denominated African, extends between Cape Palos and Cape St. Vincent. In the vicinity of the Mediterranean and the Atlantic, it is characterised by the dwarf-palm, cactus, and banana; while a more elevated zone comprehends a vegetation akin to that of Italy, surmounted by the vine, and lastly by forests of resinous trees.

ANIMALS.—The animal kingdom in Europe is less varied than the vegetable. The same animals may be considered common to the southern and north-east regions of our continent. The white bear and the blue fox appear from time to time on the shores of the frozen sea. The rein-deer is found at the sixty-first parallel in Scandinavia, and six or seven degrees lower in Russia. The lemming *(Marinda lemnus)* continues its migrations in straight lines from east to west, between the fifty-fifth and sixty-fifth parallels; the glutton is observed in the same region. The elk is generally found below the polar circle; it frequents Lithuania, and even some parts of Prussia. The Arabian sheep, which is common to the same countries, is distinguished by the form of its horns and the coarseness of its wool.

The naked plains that bound the sea of Azof and the Caspian are frequented by some animals common to Asia. The Bactrian camel pastures in these lands, rich in saline herbs; the Circassian sheep are observed near the Oca and the Dneiper. The Tartars have brought to that part of Europe their fleet horses, and the fierce jackal has migrated thither in quest of prey.

The strongest horses and oxen are found in the great and verdant plains which extend from the Ukraine and Moldavia to Denmark and Flanders. These animals have probably existed a long time in a wild state. The *urus* or the our-ochs (words which signify literally ancient or primitive oxen) are still occasionally seen in Poland. We observe in these regions, and in the whole of central Europe, a breed of sheep originally the same as that in Spain and in England; but it has been improved in different countries by natural or artificial causes. The ass, which cannot be considered indigenous to the mean European zone, has been brought to it, and has degenerated.

The wild goat, the chamois, and the marmot, frequent the great mountainous chains of Europe — the Alps, the Pyrenees, the Cevennes, the Carpathians, and Hemus.

The animals that are found in the mean zone are for the most part common to the south. The ox and the horse in Italy, if they be well fed, are as stout as any in the Ukraine or in Holstein. The Arab horse was brought into the south during the invasions of the Moors and the Turks; and from it have perhaps sprung the Andalusian and other varieties; but it is not unlikely, from observations which have been made, that the Andalusian breed is the same as the *norbagge* or small Norwegian horse; and consequently that both of them are descended from a common stock, and one in all probability indigenous to Europe. It is still less doubtful that the buffalo, an

animal not found in the north of Hungary, has been imported from Asia to southern Europe. A particular species of sheep in Sardinia, and another (the *strepsiceros*) in Candia, are supposed to be indigenous to Europe. If the ass in the southern part of the continent be not so too, it has been introduced from Asia Minor and Syria.

As the briefest enumeration of the birds, reptiles, fishes, and above all the multitudinous insects of Europe, would far exceed the limits of a work like the present, our readers must rest satisfied with such incidental notices of these animal tribes as may find a place in our special descriptions of the countries in this portion of the globe.

POPULATION. — According to M. Balbi, the population of Europe, within the limits we have already described (see *anté*, p. 157), is 227,000,000 souls. Estimating the surface of Europe at 3,710,000 English square miles, this population is in a proportion of 61 inhabitants to each square mile.

It has been remarked by Malte-Brun, that in the two great regions of Europe, viz. the western and the eastern, each portion, taken as a whole, is more populous the farther it lies to the south.* Thus, in the first of these two great divisions, the population of the northern portion is less than that of the central, and the population of the latter than that of the southern. In the second, the same difference will be observed, if we divide Russia into two portions; and then, for the purpose of establishing similar comparisons, combine the northern and central portions of western Europe. In regard to the latter, we will find the population of the united portions, to be 111 to the square mile, and that of the southern portion to be 211 to the same extent of surface. In eastern Europe, the number of inhabitants to the square mile, will be found to be 26 in the northern portion, and 45 in the southern. Thus the proportions in both regions may be considered nearly analogous. Another cause regulating density of population may be noticed. If we compare the different states with one another, we shall generally find that those which possess many islands, and widely extended coasts, have a greater command of the means of subsistence than others which lie embosomed in the land. Thus it happens that Britain and Holland, both of which are divided by natural or artificial channels into numerous islands, are, in proportion to the extent of their territory, the most populous of the European states. From the same cause population is more dense in France than in Austria, in the kingdom of Naples than in that of Sardinia, and in the Ionian Isles than in Turkey.

PEOPLE AND LANGUAGES. — The primitive history of Europe is enveloped in such obscurity, that it would be in vain to attempt to arrange its confused elements. Of all the nations of which the European family is composed, Greece appears to have been the most anciently civilized — an advantage for which it was indebted to the Phœnicians and Egyptians, the most enlightened of the nations which inhabited those portions of Asia and Africa bordering on the Mediterranean. The Greeks on their part planted colonies in Gaul and Italy; but, until Rome became the seat of a vast power, the nations of central Europe presented a character of imperfect civilization, not far removed from barbarism, analogous to that which characterised the aboriginal tribes of America, at the period when the Europeans first carried to the new continent their vices along with their religious creeds. The Romans, after having brought the Celts and Germans under subjection to their empire, were in their turn pressed at home on every side by the Scandinavian and Sarmatian nations, whose attacks they had often repulsed in the most savage regions, and were forced to yield after a lengthened resistance. Other tribes following the footsteps of these invaders, issued from the north and east, and overthrew the rising kingdoms which the latter had founded on the ruins of the Roman power. Thus, after the *Heruli*, a Scythian people from the countries of the Finns on the shores of the Baltic, had, under the guidance of their leader Odoacer, overturned the throne of the west, they were driven from Italy by the Scandinavian tribes, so well known under the name of *Ostrogoths* (East-Goths); and the latter in their turn gave way to the Slavonian race of the *Longobardi* or Lombards. The *Visigoths* (West-Goths), driven from Gaul by the *Istævenos*, a German tribe, since called Franks, settled in Spain along with the *Vandali*, another Slavonian nation. In like manner, the Saxons, Angles, and Jutes took possession of Britain. These invading tribes, far inferior in numbers to the nations in the midst of which they placed themselves, contributed to alter the languages of the latter, and to modify the manners and customs established by the Romans; but they wrought no change on the distinguishing characteristics of the inhabitants of central, western, and southern Europe. This consideration explains how it is that we still recognise among the modern nations the portrait of their ancestors described by ancient authors.

* See *Table of the Geographical and Political Divisions of Europe*, p. 176.

According to Malte-Brun, exclusive of the inhabitants of the Caucasus, ten distinct races exist still in Europe, but the most ancient are on the whole the least numerous.

The *Iemo-Hellenic* or *Greek* race, of whom the Pelasgi were a very ancient branch, if not one of the original stocks, after having peopled with their colonies many portions of the Mediterranean coasts, now exist only in Turkey, in the new kingdom of Hellas, or Greece, and the Ionian Isles. Their language, which is sprung from the ancient Greek, is by a singular anomaly called the *Romaic*.

The *Albanians* are the descendants of the Illyrians, who mingled formerly with the Pelasgic, and at a later period with the modern Greeks; enough of their ancient language remains to enable us to discover its European character, and its connexion with the German and Slavonic. No trace is left of the ancient people that are supposed to have inhabited Thrace and the countries adjacent to the Danube; they were probably composed of different races, as the Phrygian, the Slavonic, the Celtic, and the Pelasgic. It is towards Thrace, Mount Hæmus, and the Lower Danube, that we can discover the earliest origin of European states; but these indications disappear if we traverse Asia Minor, or travel by the north round the Euxine Sea.

The *Turks* belong to the same family as the Tartars, and are scattered throughout Russia from the Crimea to Kazan; one of their colonies is established in Lithuania. The Turkomans, of whom a branch is settled in Macedonia, have preserved incorrupted traces of their Asiatic origin.

Two great races, the *Slavonians* and *Finns*, have occupied from the earliest dawn of history all the countries comprehended under the vague and chimerical names of Scythia and Sarmatia. Almost all the topographical names of these countries are derived from the Slavonic and Finnic; a very small number owe their origin to the short empires of the Scythians, the Sarmatians, the Ostrogoths, and the Huns, the successive conquerors and rulers of these immense plains. It is probable that a Scythian nation, sprung from the Medes, ruled over the Finns and Slavonians, who formed the agricultural and pastoral tribes. The Sarmatians, who appear to have been of Tartar descent, mixed with the Scythians and their vassals; the Huns were another horde of the same people; both the one and the other came from the banks of the Volga and the shores of the Caspian Sea. It is certain that, at the time in which they appeared in these countries, the banks of the Vistula and the Dneiper were peopled by Slavonic and Finnic tribes. The Slavonic nations are divided, according to their dialects, into three branches: first, the *eastern Slavi*, including the Russians (a people descended from the Roxelans or Roxolani), the Slavi and Scandinavians, the Rousniacs in Galicia, the Servians or Slavi on the Danube, the Sclavonians, the Croatians and others; secondly, the *western Slavi*, or the Poles, Bohemians, Hungarian Slavi, and the Sorabs or Serbs of Lusatia; thirdly, the *northern Slavi*, or the Venedes of the Romans, the Wends of the ancient Scandinavians, a very numerous tribe, earlier civilized, but at the same time earlier incorporated in different states than the other two. The same tribe comprehends the remains of the German Wendes or Polabes, the Obotrites and Rugians, long since confounded with their conquerors the Germans; it also includes the Pomeranians, the Kassubs, subdued by the Poles; the ancient Prussians or Prutzi, exterminated or reduced to slavery by their Teutonic conquerors; and lastly, the Lithuanians, the only branch which has retained some traces of its ancient language, although mixed with the Scandinavian and Finnic.

The *Wallachians*, in the ancient Dacia and the adjacent countries, are the descendants of the Getæ, the Slavi, and the Romans; their language resembles the Latin. The *Bulgarians* are a Tartar tribe, that migrated from the neighbourhood of Kazan, and mingled with the Slavi on the Danube, and partly adopted their language.

The *Finns* wandered probably from time immemorial in the plains of eastern Europe. Some of their tribes having mixed with other nations, were included by the Greeks among the European Scythians. Their descendants were subdued and driven to the north and the east by the numerous hordes of Slavonians. It is probable that the branches of the Finnic race are the Laplanders, who are also perhaps connected with the Huns, the *Esthes*, or ancient Esthonians and Livonians; the Permians incorporated with the Scandinavians, particularly the Norwegians, Hungarians or Magyars, who were composed of Finnic and Turkish tribes, and governed by Persians or Bucharians. Such are considered the ramifications of the Finnic race, or as it is called in Russia, the *Tchoude*. There are without doubt many reasons that may induce some to regard the Hungarians as a separate branch.

The *Samoiedes*, the *Siriaines*, the *Mordvates*, and other tribes, appear to have been wandering hordes that migrated from Asia.

The *Teutonic* nations, of which the most important are the Germans, the Scandinavians, and the English, are situated to the west of the Slavonians and Finns, in the western and central regions of Europe. The Germans, on account of their different dialects, the High and the Low Deutsch, may be divided into two classes; the inhabitants of the mountains on the south, and those of the plains on the north. The Saxon, or language of Franconia and of the higher orders in Livonia and Esthonia, is intermediate between these dialects.

The *Scandinavian* nations, or the Swedes, Goths, Norwegians, Danes, and Jutlanders, form a distinct race from the German nations, and were separated from them at a remote period. Still, however, there is some resemblance between them and the Dutch, the Frieslanders, and the low Saxons. All that remains of the ancient Scandinavian, as it was spoken in the ninth century, is retained in the Dalecarlian, the old Norwegian of the valleys of Dofre, in the dialect of the Farde islands, and the Norse, the language of the Shetland islanders. Two others, or rather modern dialects, the Swedish and the Danish, are both of them branches of the ancient Scandinavian. A third dialect, that of Jutland, retains the marks of the old Anglo-Saxon, which has some affinity with the ancient Scandinavian.

The *English* and the *Lowland Scots* are sprung from Belgians, Saxons, Anglo-Saxons, Jutes, and Scandinavians. Their different dialects, united and modified, formed the old English, or the *Anglo-Dano-Saxon*. The dialects presently spoken in Suffolk, Yorkshire, and in the low counties of Scotland, bear a stronger resemblance than the English to the Teutonic tongues.

In regard to the *ancient people of the south and west*, no distinct trace remains of the Etruscans, the Ausonians, the Osci, and other indigenous states, or such at least as were anciently settled in Italy. The words Celts and Iberians are no longer used in France, Spain, and Britain; but under other denominations we may discover the descendants of these great and ancient nations.

The *Basques*, confined to the western base of the Pyrenees, still retain one of the most original languages in our part of the world; it has been proved that it is a branch of the Iberian, which was spoken in eastern and southern Spain, and was common also in Aquitanian Gaul.

The *Celts*, one of the primitive European races, were most widely scattered in different countries. The *Hibernians*, or native *Irish*, are an old branch of this people; and according to some authors, the *Highlanders of Scotland* are a colony of the native Irish. The *Erse* or Gaelic is the only authentic monument of the Celtic language.

Belgium was at one period inhabited by Celts and Germans, but it may be proved that the earlier inhabitants were of Celtic origin. The *Belgians* conquered part of England and Ireland, and mingled with the native Celts, but were afterwards subdued by the Anglo-Saxons of Wales, Cumberland, and Cornwall; from these districts they returned to the continent, and peopled lower Brittany. The *Gaulois* or Gaulic that is still spoken, is derived from the Belgian, which is very different from the Celtic, and the more modern dialect of lower Brittany is composed of several others; the Gauls

called their language the Cumraigh or the Kymri, and the Latin authors of the middle ages denominated the people Cambrians; some geographical writers have incorrectly styled them Cimbres.

Such are the three native and ancient races of Western Europe. The *language of the Romans*, particularly the popular dialect, or *Romana rustica*, came gradually into use in different countries; it was thus mixed with native languages, and gave rise to provincial idioms. The purer Latin was spoken in the towns and churches. The irruption of the northern states, all of them, or almost all of them, of Teutonic origin, introduced new confusion and new idioms into the Latino-Gallic and Latino-Iberian dialects; the language of the Troubadours, of which the seeds had been sown in a very remote age, appeared about the same time in western Europe. From it emanated the Italian, the Lombard, Venetian and Sicilian dialects, and also the *Provençal*, the *Oc* or Occitanian, the Limosin and Catelonian. The old French and some of its dialects, as the Walloon and that of Picardy, must have existed for many centuries before the French name was known; to the same source must be attributed the modern Spanish, or the Castilian and Gallician.

We are entitled to conclude, from this imperfect account of the ancient European languages, that the three most populous races were the Romano-Celtic in the south and west; the Teutonic in the centre, the north and north-west; and the Slavonic in the east.

The Greek, the Albanian, the Turkish, and the Finnic languages in the east; the Basque, the Celtic or *Erse*, and the Gaulic or Kymric, however interesting to the philologist, are considered secondary by the political arithmetician. These seven languages are not spoken by more than twenty-five or twenty-seven millions in Europe, whilst the three great races comprise the rest of the European population.

Europe reckons amongst its inhabitants the descendants of Arabians, who are found mostly in Spain, Malta, and Candia; in the last of which they are distinguished by the name of *Abdiotes*. There are also two tribes of Kalmuks, who lead a wandering life between the Volga and the Don. We may likewise mention the *Jews* that are dispersed throughout Europe, and the *Zigeunes* or *gypsies*, an ancient Indian tribe or race.

M. Balbi, in the following table, has arranged the existing inhabitants of Europe into twenty principal *stocks* or *families*, of which seven are strictly European, in the ordinary acceptation of the word, and thirteen of Asiatic origin, although now found within the boundaries of Europe as presently recognised.

Table exhibiting the Classification of the People of Europe according to their Languages.

IBERIAN or BASQUE FAMILY: — The *Escualdunac*, better known by the name of *Bascongados* or *Basques*, in Spain and France.

CELTIC FAMILY: — The *descendants of the true Celts*, in Ireland, the Highlands of Scotland, and in the Isle of Man; the *Cymri* (Kimri) or *Welsh*, in Wales; and the *Breyzad* or *Low-Bretons*, in France.

THRACO-PELASGIC or GRECO-LATIN FAMILY: — The *Schypetars* or *Skipetars*, better known under the names of *Albanians* and *Arnauts*; the *Greeks*, in the new state of Greece, European Turkey, &c.; the *Romance people*, subdivided into Catalonians, Valencians, and Majorcans, in Spain. — Languedocians, Provençals, Dauphinese, Lyonnaise, Auvergnats, Limousins, and Gascons, in France,—Savoyards, in Savoy,—and Rhætians, &c. &c. in a portion of the cantons of the Grisons and the Valais, in Switzerland; the *Italians*, in Italy; the *French*, in France, north of the Loire, in the Netherlands, and in Switzerland; the *Spaniards*, in the greater part of Spain; the *Portuguese*, in Portugal and the Açores; and the *Rumanje* or *Roumouni*, better known under the name of *Wallachians*, in Austria, Turkey, and Russia.

GERMANIC FAMILY: — The *Deutsch of Upper Germany*, subdivided into Swabians, Bavarians, Austrians, Franconians, Upper-Saxons, &c. &c.; with whom may be ranked the Germans of Switzerland, Bohemia, Moravia, Silesia, Hungary, Transylvania, Livonia, Courland, Esthonia, &c. &c.; the *Deutsch of Lower Germany*, principally the Westphalians, the Saxons of Lower Saxony, the inhabitants of the northern portion of the circle of Upper Saxony, and the Prussians properly so called, or the German inhabitants of the two provinces of Prussia; the *Frieslanders*, in Germany, Denmark, and Holland; the *Netherlanders* or *Batavians*, principally the Dutch in Holland, and Flemings in Belgium; the *Norwegians*, in Norway, part of Sweden, and in the Shetland and Farôe Islands; the *Swedes*, in Sweden, the towns of Finland, &c. &c.; the *Danes*, in Denmark, and the towns of Norway and Jutland; and the *English*, in England, the greater part of Scotland, and in part of Ireland and Wales.

SLAVONIC FAMILY: — The *Illyrians*, in Austria and Turkey, among whom we principally note the Servians, Bosnians, Dalmatians, and Bulgarians; the *Russians*, in Russia, and under the name of *Rousniacs*, in Gallicia, Hungary, and other parts of Austria, and in the largest portion of the Russian governments of Volhynia and Podolia; the *Croatians*, the *Windes* or *Wendes*, and the *Bohemians* or *Tchekes*, in Austria; the *Poles*, in the existing kingdom of Poland, republic of Cracow, a large portion of the former Polish provinces which now belong to Prussia and Austria, and in part of Silesia; the *Serbes*, in the kingdom of Saxony, and in Prussia; the *Lithuanians*, in the Russian governments of Wilna, Grodno, Minsk, Vitepsk, Smolensk, &c. &c., and in the Prussian government of Gumbinen; and the *Lettes* or *Lotavs*, in the greater part of the Russian governments of Mittau and Riga, and in a small portion of the province of Eastern Prussia.

OURALIAN, FINNISH, or TCHOUDE FAMILY: — The *Suomi* or *Finns*, in the grand-duchy of Finland, and a portion of the Russian governments of Olonetz and St. Petersburg; the *Esthonians*, in the governments of Revel and Riga; the *Sames* or *Laplanders*, in the northern portion of Russia and Sweden; the *Mari* or *Tcheremisses*, in the Russian governments of Kazan, Simbirsk, Viatka, Perm, and Orenburg; the *Mordevi*, in the governments of Penza, Kazan, Viatka, Saratov, Simbirsk, and Orenburg; the *Komi* or *Komi-Mourt*, better known under the names of *Zyraines* and *Permians*, in the governments of Perm, Viatka, Vologda, and Arkhangelsk; the *Oudi*, *Oudi-Mourt*, or *Votiacs*, in the governments of Viatka, Orenburgh, and Kazan; the *Mansi*, *Mansi-Koum*, or *Vogoules*, in the governments of Saratov and Perm, and in the upper valleys of the Oural; and the *Magyarock* or *Magyars*, better known under the name of *Hungarians*, in Hungary and Transylvania.

SAMOIEDE FAMILY: — The *Kasovo* or *Samoiedes*, in the Russian government of Arkhangelsk.

TURKISH FAMILY: — The *Osmanlee* or *Ottomans*, better known under the name of *Turks* — the dominant nation in the Ottoman empire; the *Baskirs*, in the Russian governments of Perm and Orenburg; the *Tchouvaches*, in the governments of Kazan, Viatka, Simbirsk, and Orenburg; the *Meschtchereks*, in that of Orenburg; the *Uroukes* or *Turkomans* of Macedonia in Turkey, and the *Turkomans* of the Russian Caucasian provinces, among the latter of which we principally note the *Nogai*, *Koumuks*, *Basians*, &c. &c.; lastly the alleged *pure Tartars* mentioned by Russian and German authors, but who are only the descendants of the genuine Turks that composed the

greater part of the army of the Tartar conqueror Batou: they live in the governments of Kazan, Simbirsk, Penza, Saratov, Astrakhan, and Orenburg.

TARTAR or MOGUL FAMILY:—The *Kalmuks*, in the Russian governments of Astrakhan, Simbirsk, Orenburg, and the province of the Caucasus.

AWARE FAMILY:—The *Awares*, *Agdi*, and *Didoethi* or *Dido-Unzo*.

KASZI-KOUMUK FAMILY:—The *Kaszi-Koumuks*.

AKOUCHA FAMILY:—The *Akouchas*.

KOURA FAMILY:—This people (the *Kouras*), as well as the Akouchas, Kaszi-Koumuks, and Awares, inhabit the mountains of the Caucasian region, and are known under the collective name of *Lesghis* or *Mountaineers*.

MITSDJEGHI FAMILY:—The *Mitsdjeghi*, named *Tchetchenzi* by the Russians, inhabit the upper valleys of the mountainous countries in the Caucasian provinces: among them we principally note the *Galgai* or *Ingousches*, *Karaboulaks*, &c. &c.

PERSIAN FAMILY:—The *Irons* or *Ossetes*, in the upper valleys of the mountainous countries of the Caucasian region; and the *Boukhares*, settled in several of the trading towns in the south-east of Russia.

CIRCASSIAN FAMILY:—The *Adighé* or *Adekhes* or *Adeches* or *Circassians*, in the mountainous countries of the Caucasian region.

ABASSIAN FAMILY:—The *Abene* or *Abassians*, in Little Abassia, and in the mountainous countries of the Caucasian region.

SEMITIC FAMILY:—The *Jews*, spread over all the countries of Europe, with the exception of Norway, Spain, and Portugal, but who are found in greatest numbers in Poland, Turkey, Austria, and Germany; the *Maltese*, in Malta and the neighbouring islands; and the few *Arabs* found in the Russian provinces of the Caucasus.

SANSCRIT or HINDOO FAMILY:—The *Romanny*, *Kola*, or *Sinte*, a wandering people who may be looked on as of Indian origin. They are called *Bohemians* in France, *Zigeuner* in Germany, *Zingari* in Italy, *Gitanos* in Spain, *Gipsies* in England, &c. &c.

ARMENIAN FAMILY:—The *Armenians*, in the trading towns of Turkey, also in some localities in Russia and Austria.

RELIGIONS. — Christianity in its various forms sheds a benign influence over all the surface of Europe, and is professed by nearly the whole of its numerous inhabitants.

The *Roman Catholic Church* extends its authority over almost the whole of France, Belgium, and Poland, the whole of Italy, Spain, and Portugal, three-fourths of Ireland, the greater part of Austria, nearly one half of the Swiss Confederation, and the secondary states of Germany, and over a fractional portion of the population of Turkey and Holland. The *Greek* or *Eastern Church* is established in Russia, the Ionian Isles, the new state of Greece, and in the three principalities of Servia, Wallachia, and Moldavia. Its doctrines are professed by nearly one half of the inhabitants of European Turkey, and by a large number of the subjects of Austria, especially in Transylvania, Hungary, Croatia, Sclavonia, and Dalmatia.

As we have already pointed out (see *anté*, pp. 120, 121) the principal divisions and subdivisions of the *Protestant Churches*, and shall have an opportunity of giving farther details regarding these in the description of the Germanic Confederation, we shall at present confine ourselves to a few general statements. The *Lutheran Church* is dominant in Prussia, Denmark, Norway, Sweden, Hanover, Saxony, and in Wurtemberg, and other German states. Its doctrines and forms are also adhered to by the inhabitants of the Russian provinces on the Baltic, and by a number of individuals in Austria, especially in Hungary, Transylvania, &c. *Calvinism* prevails principally in Holland, the Swiss cantons of Berne, Zurich, Bâle, &c. &c., in the duchy of Nassau, Electoral Hesse, the principalities of Anhalt, Lippe, and in some of the other German states. Calvinists are numerous in France, Prussia, and Austria, and they form a large majority of the inhabitants of Scotland. The *Anglican* or *English Episcopal Church*, to which the designation of the *Reformed Catholic Church* is sometimes applied, is established in England and Ireland; but in point of political rights and privileges, churchmen and dissenters are in both countries placed nearly on an equal footing.

It may be remarked with sufficient correctness, that the Roman Catholic, Protestant, and Greek Churches, constitute three great religious and geographical divisions of Europe, since the first prevails in the southern, the second in the northern, and the last in the eastern countries.

Besides these three great ecclesiastical divisions of Christian Europe, there are some minor religious communities, separated from the general mass; such as the *Methodists* in Britain and Ireland; the *Mennonites* or *Baptists* in Britain, Holland, Prussia, Russia, and Germany; the *Socinians* in Transylvania, and the *Unitarians* in England; the *Quakers* in England and the Netherlands; the *Armenians* in Turkey; and several other sects, to some of which we have alluded in our 122d page.

That portion of the population of Europe which does not include professors of Christianity, may be classed under four religions, viz. 1. *Islam*, the dominant religion in the Ottoman empire, and professed by all the Turkish population of Russia, mentioned in the two preceding pages; — 2. *Judaism*, professed by the Jews spread over Europe; — 3. *Lamism* (see *anté*, p. 125), or the religion professed by the wandering

hordes of Kalmuks in Russia; — 4. Lastly, *Idolatry*, which is to be found only among the Mitsdjeghi, Ossetes, Tchouvaches, Mordwa, Samoiedes, Laplanders, and other barbarous tribes inhabiting the regions of the Caucasus and Oural, and the northern solitudes of Arkhangelsk and Finmark.

GOVERNMENT and POLITICAL DIVISIONS. — The several states of Europe present every possible form of government, from the extreme of absolute despotism to that of pure democracy; but in general it may be possible to reduce these forms of government into three principal classes, namely, *autocracies* or *absolute monarchies*, *limited* or *constitutional monarchies*, and *republics*. Each of these three classes, however, presents shades of character which are highly embarrassing; and there are even some states which cannot be brought under a rigorous classification, as sometimes a portion of the territory may belong to one class, and another portion to a second. Thus, while the government of continental Sardinia is conducted under the forms of an absolute monarchy, that of the island portion of the kingdom is constitutional. Other monarchies, again, like that of Prussia, exhibit shades of character so very delicate, that they may with equal propriety be placed either in the first or in the second class. We reserve our farther remarks on these points for our special descriptions, which will include some account of the leading features of the respective governments of the different European states.

According to the latest treaties which regulate the policy of Europe, five principal countries, namely, *Russia*, *England*, *France*, *Austria*, and *Prussia*, are, in the order we have now recited them, placed at the head of the European states. The question of *precedency*, however, is extremely complicated, and is open to the influence of many modifying circumstances. Thus, while in relation to military preponderance, none of the other European states can rival Russia, Britain on the other hand surpasses them all in maritime strength. France, in manufacturing industry and territorial wealth, yields only to Britain; and if its military force numerically is inferior to that of Austria, its extent of coast and its navy place it far above the latter. Least in point of political importance probably stand the little principalities of *Lichtenstein* and *Monaco*, and the seigniory or lordship of *Kniphausen*, the last of which, with its little territory of 17 square miles, containing 2859 inhabitants, and protected by a military force 20 strong, is the most diminutive of the European states.

According to M. Balbi, the existing political divisions of Europe comprehend three *empires*, one *elective ecclesiastical monarchy*, sixteen *kingdoms*, seven *grand-duchies*, one *electorate*, twelve *duchies*, seventeen *principalities*, one *landgraviat*, one *lordship*, and thirty-one *republics*, — in all, ninety independent states.*

It is difficult to determine how to arrange the political divisions of Europe so as to combine them with its great geographical divisions. The following is the method proposed by M. Balbi: —

WESTERN EUROPE — Subdivided into —

1. *Central Portion* — Comprehending the *Austrian Empire*, the kingdoms of *France*, *Prussia*, *Holland*, and *Belgium*, and the *Swiss* and *Germanic Confederations*.
2. *Southern Portion* — Comprehending the kingdoms of *Portugal and Spain*, and the republic of *Andorra*, in the Spanish Peninsula; the nine states of Italy, viz. the *States of the Church*, the kingdoms of *Sardinia* and the *Two Sicilies*, the grand-duchy of *Tuscany*, the duchies of *Parma*, *Modena*, and *Lucca*, the principality of *Monaco*, and the republic of *San Marino*. — NOTE. — The remaining portion of Italy, namely, the Lombard-Venetian kingdom, and the islands of Corsica and Malta, belong, respectively, to Austria, France, and Britain.
3. *Northern Portion* — Comprehending the kingdoms of *Great Britain and Ireland*, *Sweden and Norway*, and *Denmark*.

EASTERN EUROPE — Comprehending the *Russian* and *Ottoman* empires, the republics of *Cracow* and the *Ionian Isles*, the new kingdom of *Greece*, and the principalities of *Servia*, *Wallachia*, and *Moldavia*.

Considerations of expediency, akin to those which have led M. Balbi, in spite of the proposed methodical arrangement now quoted, to commence the special description of the European countries given in his "Abrégé de Geographie," with the kingdom of France, induce us, in the following pages, to notice first in order the United Kingdom of Great Britain and Ireland.

* See M. Balbi's "Abrégé," &c. p. 104. In his *Tableau Statistique de l' Europe*, a translation of which will be found at the conclusion of our special descriptions of the countries of Europe, only 11 duchies, 15 principalities, and 30 republics, are named.

GREAT BRITAIN AND IRELAND.

THE UNITED KINGDOM OF GREAT BRITAIN AND IRELAND, is situate between 49° 57′ 30″ and 60° 49′ north latitude; and between 1° 46′ east and 10° 27′ west longitude. It consists of a numerous group of islands, two of which greatly exceed the others in extent and importance, viz. Great Britain and Ireland. Great Britain is politically divided into two countries, which originally formed separate kingdoms, and are still governed by different laws, viz. England and Scotland. Ireland is likewise to the same extent a distinct kingdom; for, though it has been subject to the Crown of England since the eleventh century, it nevertheless continued to possess an independent legislature till its union with Great Britain in 1801, and still enjoys the form of a separate government, administered by a Viceroy or Lord-Lieutenant. These three kingdoms we shall therefore describe in three separate sections:—1. *England and Wales;* 2. *Scotland;* 3. *Ireland.*

§ 1. *England and Wales.*

ASTRONOMICAL POSITION.—Between 50° and 55° 50′ north latitude; and 2° east and 5° 40′ west longitude.

DIMENSIONS.—England and Wales form an extensive peninsula, bounded on three sides by the sea, and separated on the north from Scotland by a line which extends obliquely from the NE. angle of the Solway Firth to a point 3 miles N. of the mouth of the Tweed. The *greatest lineal extent* of England is about 367 miles, from the Land's End in Cornwall to the north-east coast of Norfolk; from the coast of Dorsetshire to Berwick-upon-Tweed, measured along the second meridian, W. the length is 362 miles; from the Land's End to North Foreland in Kent, 330 miles; and from St David's Head in Pembroke, to Lowestoft in Suffolk, about 300 miles. Between Lancaster Bay, and Bridlington Bay in Yorkshire, the *breadth* is contracted to 110 miles; and between the head of the Solway Firth and Tynemouth, it is farther diminished to 64. From these measurements, as well as from an inspection of the map, it will be seen that the figure of England is extremely irregular, and approaches pretty nearly to the fanciful representation of the Island given by the Romans, as a woman seated on a rock, the well known BRITANNIA. The *superficial extent* has long been a question of considerable doubt; according to Arrowsmith's map, which is founded upon the Ordnance Survey, it amounts to 57,960 square miles, or 37,094,400 imperial acres; and this is the estimate now adopted in Parliamentary reports.

BOUNDARIES.—*Northern*:—Scotland. *Eastern*:—the German Ocean or North Sea. *Southern*:—the English Channel. *Western*:—St George's Channel and the Irish Sea.

GENERAL ASPECT.—England is generally a level country. The northern part of the kingdom, comprehending Westmoreland, a considerable part of Cumberland, Lancashire, and Yorkshire, is mountainous; but the southern counties present only a succession of picturesque eminences, which do not reach any considerable elevation, and only serve to diversify the surface of the country. The greater part of the Scottish Border is formed by the Cheviot Hills, a range of considerable height; from the western extremity of which a great longitudinal chain, with an elevation varying from 1200 feet to nearly 3000, extends southward, through Cumberland, Northumberland, Lancashire, and Yorkshire, to the middle of Derbyshire. This chain forms the watershed of the country, and is continuous except at two points, the one where it is nearly intersected by the valleys of the rivers Aire and Ribble, and the other along the line of the Roman wall between Newcastle and Carlisle. Connected with this range, but almost separated from it by the valleys of the Eden and the Lune, is a group of lofty mountains which cover a great part of Westmoreland and Cumberland; where Scawfell, Helvellyn, Skiddaw, and Bowfell rise respectively to 3166, 3055, 3022, and 2911 feet above the level of the sea.

The second great watershed of England is formed by a range of table-land, rising sometimes into hills, and attaining a height of 1500 feet, which extends in a tortuous line through the East Riding of Yorkshire, and the counties of Lincoln, Northampton, Oxford, Gloucester, Somerset, and Dorset, where it terminates on the coast in the island of Purbeck. It is chiefly composed of oolitic rocks, rising above the lias formation, and presents generally a bold escarpment to the west, with a regular slope towards the east. In Gloucester and Somerset, this range forms the Cotswold,

Mendip, Quantock, and Brendon hills, in the last of which Dunkerry beacon, one of the highest summits in the west of England, rises to the height of 1660 feet above the level of the sea.

The southern and eastern counties are traversed by various ranges of chalk hills, of small elevation, which diverge from Salisbury Plain. One of these extends through Hampshire and Sussex to Beachy head, forming the *South-Downs* of the latter county; a second extends in nearly the same direction, through Hampshire, Surrey, and Kent, and forms the *North-Downs;* while the third and most important range pursues a north-easterly direction, through the counties of Berks, Oxford, Buckingham, Bedford, Cambridge, and Suffolk, and the western part of Norfolk, where it forms the eastern border of the Fens.

The south-western counties of Devon and Cornwall are occupied by mountains of granitic formation, sometimes called the Devonian range, the principal chain of which extends in a south-westerly direction from the vale of Exeter to the Land's End. Wales is occupied by a system of high and rugged mountains, which constitute several groups and chains, and intersect the country in various directions, between the Bristol Channel and the Irish Sea. From this survey it appears that the highest and most rugged part of England is to be found near its western coast, while the principal plains and lowlands slope towards the German Ocean.

Besides the moorlands which occur among the mountains already mentioned, and cover a large portion of their surface, there are several other tracts of that description which are worthy of notice. In the eastern part of the North Riding of Yorkshire, at a considerable elevation above the level of the sea, are the *Eastern moorlands*, which extend about 30 miles in length by 20 in breadth, and consist chiefly of stony hills and peat mosses, with a cold and ungenial climate. There are, however, even in this tract, a number of fertile well-cultivated dales, some of which contain from 5000 to upwards of 10,000 acres. The *moorlands of Staffordshire* occupy the northern part of that county, at an elevation between 500 and 1154 feet, and are of various quality and aspect. *Dartmoor*, in Devonshire, between Exeter and Plymouth, covers a space of from 200,000 to 300,000 acres, at a mean elevation of 1700 feet above the level of the sea. Its surface is characterised by extreme ruggedness; the soil is in many parts covered with fragments of rock, and where free from these is thin and poor. In the highest part of the moor there is a morass of about 80,000 acres, which is, in some places, incapable of supporting the weight of the smallest quadrupeds. In the western part of Somersetshire, but extending also into Devonshire, is *Exmoor*, a tract of about 20,000 acres, of considerable elevation, which is mostly waste and irreclaimable; but produces a small hardy breed of horses, and affords pasture to about 20,000 sheep of a peculiar breed, to which it gives its name. Besides these hilly moorlands, there are also extensive heaths in several parts of England, principally in Surrey, Dorset, and Hants, which consist of exceedingly poor land, and are generally flat and uninteresting.

These ranges of mountains, hills, and moorlands, divide the country into a great many plains and valleys, which are traversed by a corresponding number of rivers, few of which are naturally navigable to any considerable extent. A few of the more interesting of these districts may here be enumerated. The *Vale of York* may justly be regarded as the principal river vale in the island. It extends about 60 miles in length by 15 in breadth, and contains an area of 1000 square miles, or 640,000 acres. *Holderness*, the south-eastern portion of Yorkshire, lying between the Humber and the sea, is a plain with a low but undulating surface, of about 270,000 acres. The city of Carlisle, in Cumberland, is placed in the centre of a large plain of 300,000 acres. The *Vale of the Severn*, one of the most fertile districts in England, extends through Gloucestershire and Worcestershire for about 40 miles. The *Vale of Exeter*, in Devonshire, watered by the Exe and the Otter, contains about 200 square miles, or 128,000 acres. The *Vale of Taunton*, in Somersetshire, covers an area of about 100 square miles, or 64,000 acres of great fertility, producing the finest crops, fruits, and herbage, with a climate peculiarly mild. Between the North and the South Downs is the *Weald of Kent, Surrey, and Sussex*, a tract of generally level land, comprising about 640,000 acres, and extending from Romney Marsh in Kent, to Petworth in Sussex, a distance of 60 or 65 miles, with a breadth of from 8 to 15. The *Fens* form a level tract of above 400,000 acres of very low marshy land, lying around the Wash, principally in Cambridge and Lincoln, but partly also in Northampton, Norfolk, Suffolk, and Huntingdonshire. *Romney Marsh*, in Kent, is connected with the *Welland, Denge*, and *Guildford marshes* in Sussex, which form together a tract of 46,700 acres, the greater part of which is uncommonly rich and productive. The

marshes of Somersetshire are likewise of very considerable extent and importance. They lie along the Bristol Channel, are traversed by the rivers Axe, Brue, and Parret, and in point of fertility are not surpassed by any in the kingdom. *Salisbury Plain*, in Wiltshire, is an oval shaped district of remarkable interest. It extends 22 miles in length from east to west by 15 in breadth, and constitutes an elevated table-land of chalk formation, which has at a distance the appearance of a large plain, but is actually traversed by numerous, and sometimes extensive valleys, and presents almost everywhere a billowy surface. The soil is generally thin and light, and, though in many parts unfit for cultivation, it is covered with a fine green sward that affords excellent pasture for sheep. Adjoining to Salisbury Plain, on the north-east, are *Marlborough Downs*, which exhibit an appearance in all respects similar, except that the surface is more uneven. The general elevation is between 400 and 500 feet. But the largest plain in England is that which extends from the Thames north-eastward through Essex, Suffolk, and Norfolk, comprehending nearly the whole of these counties, with a considerable portion of those that border upon them to the west.

The sea-coast of England presents a very different aspect in different situations, modified according to the character of the country of which it is composed. In some places, as in Cornwall, Kent, part of Norfolk, and Wales, it is high and steep; while in other places it is low, sandy, and marshy; but exhibits on the whole appearances so various as scarcely to admit of being comprehended in a general description. Though partaking much more of a level than of a rugged character, it still differs essentially from the opposite coast of Flanders, Holland, and Friesland, which presents one continued flat for more than 300 miles. The only parts, indeed, of the coast of England, that bear a similar character to any great extent, are Holland, in Lincolnshire, and the coasts of the Wash, in the adjoining counties of Cambridge and Norfolk.

GULFS, BAYS, AND STRAITS. — *On the East coast:* — The *estuaries of the rivers Tyne and Tees*, the former between Northumberland and Durham, the latter between Durham and the North Riding of Yorkshi re *Runswick Bay*, *Robin Hood's Bay*, *Filey Bay*, and *Bridlington Bay*, on the coast of Yorkshire. The *Humber*, between Yorkshire and Lincolnshire, a large estuary which receives the waters of the numerous rivers that drain the counties of Stafford, Derby, Nottingham, and York. The *Wash*, a large inlet between Lincolnshire and Norfolk, filled with sandbanks, the tops of which are dry at low water, and of which the lower portions are intersected by channels so intricate, that only experienced pilots can navigate them *Solebay*, off Southwold, in Suffolk. The *estuary of the Stour*, between Suffolk and Essex. The *estuary of the Thames*, between Essex and Kent, obstructed by numerous and extensive sandbanks, among which are several channels passable by the largest ships. *Yarmouth Roads*, off the coast of Norfolk, afford a good anchorage, protected by sandbanks. The *Downs*, at the eastern extremity of Kent, an anchorage sheltered from easterly gales by the Goodwin sands, which scarcely rise above water, and are very dangerous to shipping.

On the South coast: — The *Solent*, *Southampton Water*, and *Spithead*, form together a large navigable strait, between Hampshire and the Isle of Wight. The Solent is in most places about 2 miles wide; but a little to the north of the rocks called the Needles, the western point of the Isle of Wight, it is contracted to less than a mile by a remarkable tongue of land, which is projected from Hampshire. Hurst castle occupies the extremity of this projection, and, owing to the narrowness of the passage, the tide runs through it with such force that it has deepened the channel to 28 fathoms. Southampton Water is a large inlet, stretching upwards of 10 miles into Hampshire, and navigable to its extremity for vessels of considerable burden. Spithead derives its name from a sandbank called the Spit, which extends about 3 miles in a south-east direction from Gosport. It forms an anchorage, protected by the Isle of Wight from all gales from west to south-east, and from the opposite quarters by the high lands of Hampshire. *St. Helen's Road*, off the east end of the Isle of Wight. *Studland Bay*, on the southeast coast of Dorsetshire. *Torbay* and *Start Bay*, on the coast of Devonshire. *Portland Roads*, a good anchorage on the east side of Portland Island. *Plymouth Sound*, the estuary of the rivers Tamer and Plym, between Devonshire and Cornwall. This estuary is double: the Plym-mouth, forming the Catwater, a convenient harbour for merchant ships; and the Tamer, expanding into the road or harbour of Hamoaze, which is almost completely land-locked, with secure anchorage ground, and depth of water sufficient to float the largest ships close to the quays. The sound is now protected from the heavy swell produced by the south-west gales, by a stupendous breakwater near its mouth. *Polkerris Bay*, an indent of

the land, half way between Plymouth Sound and Falmouth Harbour. *Falmouth Harbour*, and *Mount's Bay*, deriving its name from Saint Michael's Mount, an insulated rock off the coast of Cornwall.

On the West coast: — *St. Ives Bay*, in Cornwall. *Barnstaple* or *Bideford Bay*, in Devonshire. *Bristol Channel*, a deep gulf, between Wales on the north, and the counties of Devon and Somerset on the south, about 25 miles wide at its mouth, and contracted to 8, where it joins the estuary of the Severn. *Bridgewater Bay*, on the Somerset coast of the Bristol Channel. *Swansea Bay* and *Caermarthen Bay*, two wide inlets, on the north side of the Bristol Channel, in Glamorganshire and Caermarthenshire. *Milford Haven* and *St. Bride's Bay*, Pembrokeshire. Milford Haven is one of the safest and most capacious harbours in Britain; the water is deep, and completely land-locked; and it may be safely entered at any time without a pilot. A royal dockyard has been built on the south side of the haven near Pembroke. *Cardigan Bay* and *Caernarvon Bay*, on the west coast of the respective counties. The *Menai Strait*, between Caernarvonshire and the island of Anglesea, affords a navigable channel for vessels of moderate burden, and is about 14 miles in length, varying in width from about two miles to 200 yards. It is crossed by a magnificent suspension bridge, the largest in the kingdom. *Holyhead Bay*, between the island of Holyhead and the opposite coast of Anglesea. *Lancaster Bay* and *Morecambe Bay*, in the north-western part of Lancashire. The *Solway Firth*, a large shallow estuary, between Cumberland and Dumfries-shire in Scotland. A great part of this firth, and of the two last mentioned bays, is left bare by the tide at low water; and it has been lately proposed to carry a dam or dyke, of ten miles in length, across Morecambe Bay, the effect of which will be to recover about 50,000 acres of land from the sea.

CAPES.—**Flamborough Head* and **Spurn Head*, in Yorkshire; *Gibraltar Point*, in Lincolnshire; *Hunstanton Cliff*, at the eastern entrance of the Wash; **Cromer Head-land* and **Winterton-Ness*, on the coast of Norfolk; *Orford-Ness*, in Suffolk; the *Naze*, in Essex; **North Foreland*, **South Foreland*, and **Dungeness*, in Kent; **Beachy Head* and *Selsea-Bill*, in Sussex; **Hurst Point*, in Hampshire; *Dunnose Head*, on the east side of the Isle of Wight; the **Needles*, in the west of the Isle of Wight; *St. Alban's Head* and **Portland-Bill*, in Dorsetshire; *Hope's-Nose*, *Berry Head*, *Start Point*, *Prawle Point*, *Balt Head*, and *Stoke Point*, in Devonshire; *Rame Head*, at the west side of the entrance at Plymouth Sound; *Deadman Point*, **Lizard Point*, *Land's End*, *Cape Cornwall*, *Trevose Head*, and *Pentire*, in Cornwall; *Hartland Point*, *Baggy Point*, *Mort Point*, on the north coast of Devonshire; *Penarth Head*, **Mumbles Head*, and *Worms Head*, in Glamorganshire; *St. Goven's Head*, *St. Ann's Head*, *St. David's Head*, and *Strumble Head*, in Pembrokeshire; *Brach-y-Pwll*, the south-western point of Caernarvonshire; **Linis Point* or *Llane-Lian*, the north-eastern extremity of Anglesea; *Great Orme's Head*, in Denbighshire; **Point of Air*, in Flintshire; **St. Bee's Head*, in Cumberland; **Point of Aire*, in the Isle of Man.

ISLANDS, SANDBANKS, and SHOALS. — *On the East coast:* — *Holy Island*, or *Lindisfarne*, off the coast of N. Durham, separated from the mainland by a strait 3 miles wide, left bare at low water, but passable with safety only at one place, contains the remains of an ancient abbey, and a castle built upon a lofty rock. *Fern Islands* and *Staple Islands*, two groups of rocks, on which lighthouses are erected, lying off Bamborough Castle, in Northumberland. *Coquet Island*, off the mouth of the Coquet River, Northumberland. Sandbank, on which the *Spurn* floating-light vessel is moored, 3½ miles south-east of Spurn Head, at the mouth of the Humber. *Dudgeon Shoal*, on the south-western side of which a floating-light vessel is moored, nearly 26 miles north of the port of Wells in Norfolk. Anchorage of the *Lynn Well* floating-light vessel at the mouth of the Wash, between the channels called Boston Deeps and Lynn Deeps. *Newarp Sandbank*, at the northern extremity of which a floating-light vessel is moored about 11 miles north of Winterton, on the Norfolk coast. Anchorage of the *Stanford Channel* floating-light vessel off Leostoffe or Lowestoff, in Suffolk. *Galloper Sandbank*, about 20 miles south of Orford-ness, on the Suffolk coast. The islands of *Mersea*, *Osey*, *Northey*, *Foulness*, *Wallasea*, *Potten*, and *Canvey*, lying off the coast of Essex. *Sunk Sandbank*, at the eastern extremity of which a floating-light vessel is moored, between King's Channel and Sunk Channel at the mouth of the Thames, 15 miles SW. by W. of Harwich. Anchorage of the *Nore* floating-light vessel, between the Thames and Medway navigations, about 3 miles NE. of Sheerness. *Sheppey Isle*, off the north coast of Kent. The *Isle of Thanet*,

* The prefixed *asterisk* denotes the headland to be the site of a lighthouse.

the north-eastern portion of Kent, formed by the two branches of the river Stour, which were anciently a strait or arm of the sea. *Goodwin Sands*, near the north sand head of which the Goodwin floating-light vessel is moored, about 7 miles SSE. of the North Foreland. Anchorage of the *Gull Stream* floating-light vessel, inside the Goodwin Sands, and opposite to Sandwich.

On the South coast: — *Owers Shoal*, near the north-eastern extremity of which a floating-light vessel is moored, 6 miles SE. by E. of Selsea Bill, on the Sussex coast. *West Thorney Island*, off the south-west coast of Sussex. *Heyling Island*, off the south-east coast of Hampshire. The *Isle of Wight*, a large and beautiful island, called the garden of England, off the coast of Hampshire. *Purbeck* and *Portland* islands, two peninsulas off the coast of Dorset, noted for their quarries. *Portland* is a vast mass of freestone, joined to the mainland by a shingly beach nine or ten miles long, called the *Chasil Bank*. The *Nab Rock*, 2½ miles SE. by E. of Great St. Helen's, in the Isle of Wight; and near which the Bembridge floating-light vessel is moored. *Eddystone Rock*, on which a celebrated lighthouse is erected, about 9 miles SSW. of the Rame Head in Cornwall. *Longships Rocks*, on the highest of which a lighthouse is erected, 3 miles west of the Land's End, in Cornwall. The *Scilly Islands*, a group, seventeen in number, situate about 30 miles WSW. of the Land's End; the largest are St. Mary's, Fresco or Frescow, St. Martin's, Ganilly, Bryer, and St. Agnes, which last is one of the most southern in the group, and is the site of a lighthouse.

On the West coast:—*Lundy Island* (site of a lighthouse), situate at the entrance of the Bristol Channel, about 9 miles NW. by N. of Hartland Point, in Devonshire. *Barry Island*, lying immediately off the southern coast of Glamorganshire. *Flatholm* (site of a lighthouse), and *Steepholm*, situate near the middle of the channel, opposite to Bridgewater Bay. *Caldy, Stockham, Skomer, Grasholm, Smalls* (lighthouse), *Ramsey, Bishop and his Clerks*, all on the coast of Pembroke. *Cardigan Island*, at the mouth of the River Teify, Cardiganshire. *St. Tudwal Islands*, off the south-eastern point of Caernarvonshire. *Bradsea* or *Bardsey Island* (site of a lighthouse), situate about 3 miles to the south of Brach-y-Pwll headland, in Caernarvonshire. *Anglesea*, itself a county. *Holyhead*, a portion of Anglesea, situate to the west of the principal island, from which it is separated only by a very narrow channel. *South Stack*, the site of a lighthouse, a small island to the west of the promontory of Holyhead, with which it is connected by a suspension bridge. *Skerries Island* (site of a lighthouse), situate about 1½ miles off the north-west point of Anglesea. *Helbre Island*, at the entrance to the estuary of the River Dee. Anchorage of the Liverpool floating-light vessel, about 6 miles NW. of Helbre Island. *Black Rock* (site of a lighthouse), on the Cheshire side of the entrance to the River Mersey. *Walney Island*, situate at the northern entrance to Lancaster and Morecambe bays; a lighthouse is erected on its southern extremity. The large and populous *Isle of Man*. The *Calf of Man* (site of a lighthouse), a small island, separated by a narrow channel from the southern extremity of the Isle of Man.

On the South coast of the English Channel: — The *Norman* or *Channel Islands*, which have been an appendage of the English crown since the eleventh century. The principal of them are *Jersey*, 12 miles by 5 or 6; *Guernsey*, 9 miles by 6; *Alderney, Sark, Herm, Caskets*, and many other islets and rocks of small extent. Between Alderney and Cape La Hogue in France the tide rushes through with great impetuosity; from which circumstance the passage has got the name of the *Race of Alderney*.

RIVERS. — The THAMES is formed by the union of the *Lech, Colne, Charne*, and *Isis*, small streams which rise in different parts of the Cotswold hills, in Gloucestershire. Under the name of Isis, the river thus formed flows eastward till it is joined by the Thame near Dorchester, in Oxfordshire; after which it becomes properly the Thame-isis, or Thames. From this it flows eastward to the German Ocean. (See INLAND NAVIGATION.) Its principal affluents are: the *Windrush, Evenlode, Cherwell*, and *Thame*, in Oxfordshire; the *Kennet* and *Loddon*, in Berkshire; the *Colne*, between Buckinghamshire and Middlesex; the *Brent*, in Middlesex; the *Lea*, from Hertfordshire; the *Wey* and the *Mole*, from Surrey; the *Roding*, from Essex; the *Darent* and the *Medway*, from Kent. The *Medway* is a large river, with a broad estuary, navigable by the largest ships of war up to Chatham.

The SEVERN issues from a small lake on the east side of Plinlimmon, in Montgomeryshire, and flows in a circuitous direction through the counties of Salop, Worcester, and Gloucester, and enters the Bristol Channel. The Severn is larger than the Thames. During the first part of its course, it preserves the characteristics of a

mountain stream, being clear, and at times bordered by picturesque scenery; but on leaving Wales, and entering the more level country, it becomes a full, slow-flowing river, and admits of easy navigation. Its principal affluents are: the *Teme*, in Montgomeryshire; the *Upper Avon*, in Warwickshire, a large river, navigable for barges for about 40 miles; the *Lower Avon*, between Gloucestershire and Somersetshire, navigable for large ships from its mouth, at King Road up to Bristol, a distance of 8 miles. The tide at the mouth of the Lower Avon rises 48 feet. The *Wye*, celebrated for its romantic and beautiful scenery, rises on the south side of Plinlimmon, near the source of the Severn, flows with a winding course through the counties of Radnor, and Hereford, and, after separating Gloucestershire from Monmouthshire, unites with the larger stream below Chepstow, where the tide rises 60 feet. The Wye is navigable for barges for about 100 miles.

The TRENT rises in the moorlands of Staffordshire, about four miles north of Burslem, and flows through the counties of Stafford, Derby, Nottingham, and Lincoln, into the Humber. It is navigable for barges to Burton, in Derbyshire, a distance of 117 miles, during which it falls only 118 feet. Its principal affluents are: the *Soar* and the *Wreke*, from Leicestershire; the *Tame*, from Warwickshire; the *Blyth* and the *Sow*, in Staffordshire; the *Dove*, between Staffordshire and Derbyshire; the *Derwent*, in Derbyshire; the *Devon* and the *Idle*, in Nottinghamshire.

The other rivers which unite with the Trent in forming the Humber are: the *Ouse*, *Swale*, *Ure*, *Nidd*, *Wharfe*, *Derwent*, *Aire*, *Calder*, *Don*, *Rother*, and *Hull*, all in Yorkshire. The first ten form one stream, which retains the name of Ouse till it reach the mouth of the Trent, and most of them have been rendered navigable for barges through great part of their course. The Hull is a small river in the east Riding, having at its mouth the great commercial port of Kingston-upon-Hull.

The *Till*, *Aln*, *Coquet*, *Wensbeck*, *Blyth*, *Tyne*, *Derwent*, in Northumberland; the *Wear*, in Durham; the *Tees*, between Durham and Yorkshire; the *Esk*, in Yorkshire; the *Witham* and the *Glen*, in Lincolnshire; the *Nen*, in Northamptonshire, joined by the *Welland* from Leicestershire and Rutlandshire; the *Great Ouse* from Buckinghamshire, flows through the counties of Bedford, Huntingdon, Cambridge, and Norfolk, into the Wash, and is joined by the *Towe*, in Northamptonshire, the *Cam* or *Granta*, in Cambridgeshire, the *Lark* and the *Kennet* from Suffolk, the *Little Ouse*, the *Wissey* and the *Nar* from Norfolk; the *Bure*, *Yare*, and *Wensom*, in Norfolk; the *Waveney*, between Suffolk and Norfolk; the *Deben*, *Orwell*, and *Stour*, in Suffolk; the *Colne*, *Blackwater*, and *Chelmer*, in Essex; the *Stour*, in Kent; the *Rother*, *Cuckmere*, *Ouse*, *Adur*, and *Arun*, in Sussex; the *Anton*, or *Test*, and the *Itchin*, in Hampshire, enter Southampton water; the *Avon* from Wiltshire, and the *Stour* from Dorsetshire, enter the sea in a united stream, between the Needles and Poole harbour; the *Frome* falls into Poole harbour; the *Otter*, *Exe*, *Teign*, *Dart*, *Plym*, *Torridge*, *Waldon*, and *Taw*, in Devonshire; the *Tamer*, between Devonshire and Cornwall; the *Stake*, *Parret*, *Brue*, and *Yeo*, in Somersetshire; the *Usk*, in Brecknockshire and Monmouthshire; the *Taff*, in Glamorganshire; the *Towey* and the *Taff*, in Caermarthenshire; the *Teifi* and *Rheidiol*, in Cardiganshire: the *Dovey*, or *Dyfi*, from Montgomery, flows into Cardigan bay; the *Conway*, in Caernarvonshire; the *Clywyd*, in Denbighshire; the *Dee* flows through Merioneth, Flint, and Cheshire; the *Mersey* forms a wide estuary, between Lancashire and Cheshire, and is joined by the *Weaver* and *Bollin* from Cheshire, the *Irwell*, and the *Roch*, from Lancashire; the *Ribble* rises in the west moorlands of Yorkshire, and with its affluents, the *Darmen* and the *Douglas*, forms a wide but shallow estuary on the coast of Lancashire; the *Wyre* and the *Lune*, in Lancashire; the *Dudden*, in Westmoreland; the *Cocker* and the *Eden*, joined by the *Caldew* and the *Petteril*, in Cumberland.

LAKES.—These are few and inconsiderable in size, as the largest of them (Winandermere) only occupies an area of about three square miles. The principal are in Cumberland, Westmoreland, and Lancashire, viz.—*Ulles-Water* (the second largest of the English lakes), on the north-eastern side of Helvellyn, partly in Cumberland, and partly in Westmoreland; *Hawes-Water*, in Westmoreland, about five miles to the east of Helvellyn; *Thirlemere*, or *Leathes-Water*, on the western side of Helvellyn; *Winandermere* on the borders of Westmoreland and Lancashire; *Coniston-Water*, in Lancashire, to the west of Winandermere; *Rydal* and *Grasmere* Waters, near the northern extremity of Winandermere; *Derwent-Water*, called also *Keswick Lake*, from its vicinity to the town of that name in Cumberland; *Bassenthwaite-Water*, to the north-west of Keswick; and *Crummock-Water*, *Buttermere*, *Lowes-Water*, *Ennerdale-Water*, and *Wast-Water*, in the south-west of Cumberland. These lakes are all celebrated for the beauty and romantic character of their scenery. Two small lakes named *Whittlesearmere* and *Ramseymere*, are situate in the north of Huntingdonshire. *Bala Lake*, in Merionethshire, is the largest of the Welsh lakes. Its dimensions are four miles in length by one in breadth.

MOUNTAINS, VALLEYS, AND PLAINS.—These have been already described in the view of the British Mountain Systems (*antè*, p. 159), and under the head of "General Aspect of England" (*antè*, p. 177.)

CLIMATE.—The climate of England is that of an insular country of limited extent, subject, in consequence, to rain, and exempt from intense heat or cold. It is less humid than the climate of Ireland, but less dry than that of the opposite shores of Holland and Germany. The climate of the southern counties differs but little from that of Brittany, Normandy, and Flanders; while that of the north is very similar to the climate of Denmark. If England have less summer warmth than continental countries on the same parallel, it generally escapes the intense frosts which they experience. On the other hand, the weather in England is much more variable than in the inland parts of the Continent, and the sky is generally less clear. The moderate

heat and frequent rain preserve throughout the year that verdant pasture which, in autumn, the Continent enjoys only in its maritime borders; whilst those droughts in spring, which are so injurious in the south of France, and in similar latitudes on the Continent, are scarcely known in England. In point of salubrity also, England will bear a comparison with any of the neighbouring countries; for variable as her climate is, in no country do the inhabitants enjoy in general a greater share of health, or furnish so many examples of longevity. This beneficial effect England owes to her insular situation, the extremes of heat and cold being prevented by the modifying influence of the surrounding seas. There exists, however, a considerable difference in the climate of different parts of England. The western portion, which is contiguous to the Atlantic, and contains hills and mountains which intercept the clouds, is much more exposed to rain than the eastern, where the surface of the country is level, and the expanse of sea much less considerable. Another, and equally remarkable difference arises from latitude; the harvest being a fortnight or three weeks later in the north than in the south of England. In March the weather is proverbially raw and cold; in April it is generally wet, and favourable to vegetation; but May, though a pleasant month, can hardly be said to bring with it more "indulgent skies." In June, July, and August, the weather is more uniform; but the heat is seldom so great as to prevent daily exercise. November, though often wet and foggy, is only a prelude to winter; and even December does not often bring intense frost, which is commonly reserved for January. This month, with February and part of March and December, are, properly speaking, the only winter months. During the six months from October to March, the mean temperature of the central part of England is usually between 42° and 43° of Fahrenheit. In December, January, and February, it is generally below 40°; in July and August it varies from 62° to 65°. The variations of temperature are greatest and most frequent in the equinoxial months, March and September, when there is often a difference of 18° or 20° between the day and the night; while in the summer months this difference is seldom more than from 12° to 15°, and in December and January only from 6° to 8°. The mean annual temperature, noon and night, of the central part of England is about 50°. The greatest summer heat seldom exceeds 80°, and the cold of December or January is rarely below 20° or 25°. At Liverpool, the mean temperature at noon, during twenty-five years, was 53°, the extremes being 86° and 22°. At the same place, the greatest range of the thermometer is 64°, and the mean annual range 46°. At Lancaster, the mean temperature, noon and night, is 48°, and the extremes 82° and 18°. At Dover, the mean temperature is 57°, and the mean annual range 51°. At London, the mean annual temperature is 52°, and the extremes 81° and 20°, the former occurring generally in July, the latter in January. In mild situations, in Devonshire and Cornwall, the winter temperature is 2°, 3°, 4°, and even 5° higher than in London. Penzance, in the latter county, is particularly celebrated for the mildness and salubrity of its climate; and is, in consequence, much recommended to persons afflicted with pulmonary diseases. The largest proportion of rain falls in the north-west of England: the smallest in the neighbourhood of London. At Keswick the average quantity is 67 inches annually; at London the average is 22.7 inches; and the average of the whole kingdom may be from 30 to 40 inches. It was stated at the last meeting of the British Association, that at London the SW. wind prevails 112 days, the W. 53, the NNE. 50, the S. 18, the NE. 58, the SE. 22, the E. 27, and the N. 16. Taking England throughout, the prevalent winds are the west and south-west, in the proportions of 5 to 8.

GEOLOGY AND MINERAL PRODUCTIONS.—Our notices under the first of these heads must necessarily be limited to a brief view of the classification of the British rocks, and their geographical distribution throughout England.

It has been already pointed out (see *ante*, pp. 62, 71 and 72) that rocks are of two classes, viz. the *stratified* or deposited rocks, and the *unstratified* or chrystalline, and that the former were at various eras produced under water, and subsequently elevated to their present positions by the upheaving force, or by the protrusion of the latter. The stratified rocks admit of being variously classified; but, following the arrangement proposed by Professor Phillips, we may conceive, the whole mass of known stratified rocks to be divided into three great portions, called PRIMARY, SECONDARY, and TERTIARY, from the respective eras of their production; the lowest being the oldest or earliest, the uppermost being the newest or latest. These great portions may be again subdivided into systems or assemblages, composed of formations or groups in many respects analogous in character and origin, and named from the most characteristic rock in each:—*Cretaceous* from chalk, *Oolitic* from oolite, *Saliferous* from saline deposits, &c. or else from locality, as, *Silurian*.* The general arrangement of these groups of strata, proceeding from the surface downwards, will be found in the following table.

* See article "GEOLOGY," by Professor John Phillips, in Encyclopædia Britannica, *Seventh Edition*. Also the same printed separately.

TABLE OF BRITISH STRATIFIED ROCKS.

Names of Formations or Groups of Strata.	*Thickness in yards.*	*Subdivisions adopted.*	*Nature of the Deposits.*
		TERTIARY STRATA.	
Crag,	16	Upper or red crag,	Shells, pebbles, sand, &c.
		Lower or coralline crag,	Shells and corals in sand or limestone.
Fresh-water group,	33	Upper fresh-water beds,	Fresh-water shells in marl or limestone.
		Estuary marls,	Estuary shells in marl.
		Lower fresh-water beds,	Fresh-water shells in marl or limestone.
London clay,	200 to 600	London clay,	Shelly clay with septaria.
		Plastic clay and sands,	Coloured sands and clays, with or without shells.
		SECONDARY STRATA.	
		Cretaceous System.	
Chalk,	200	Upper chalk,	Soft, with flints.
		Lower chalk,	Harder, with or without flints.
		Chalk marl,	Soft argillaceous beds.
Green-sand,	160	Upper green sand,	Fossiliferous often chalky.
		Gault,	Blue marl or clay, fossiliferous.
		Lower green sand,	Often ferruginous, fossiliferous.
		Oolitic System.	
Wealden,	300	Weald clay,	Clay, with fresh-water shells.
		Hastings sands,	Sandstone, with plants, &c.
		Purbeck beds,	Clay and limestone, with fresh-water shells.
Upper or Portland Oolite,	100 to 200	Portland oolite,	Limestone, often cherty and fossiliferous.
		Sand,	Sand.
		Kimmeridge clay,	Blue clay, with shells.
Middle or Oxford Oolite,	150	Upper calcareous grit,	Sandstone, often shelly.
		Coralline oolite,	Shelly oolite and coral beds.
		Lower calcareous grit,	Shelly sandstone.
		Oxford clay,	Clay, with shells and septaria.
		Kelloways rock,	Sandstone, with shells.
Lower or Bath Oolite,*	150	Clay,	Generally with few shells.
		Cornbrash,	Coarse shelly limestone.
		Sand,	With concretionary sandstone.
		Forest marble,	Shelly limestone.
		Clay,	Thin blue clay.
		Bath oolite,	Shelly compact and sandy oolite.
		Fuller's earth,	Calcareous and argillaceous beds.
		Inferior oolite,	Shelly and oolitic.
		Sand,	Shelly calcareous sand.
Lias,	350	Upper lias shale,	Blue clay or aluminous shale, shelly.
		Marl-stone,	Sandy limestone, &c. shelly.
		Middle lias shale,	Blue clay or shale, shelly.
		Lias limestones,	Blue and white compact limestone shelly.
		Lower lias shale,	Coloured clays and marls.
		Saliferous or *Red Sandstone System.*	
New Red Sandstone, (North of England.)	300	Variegated marls,	Contain gypsum and rock-salt; shells rarely found.
		Variegated sandstones,	Red, white, &c. sandstones, no shells.
		Conglomerate,	Pebbly sandstone.
Magnesian Limestone, (Yorkshire, &c.)	100	Knottingley limestone,	Thin-bedded close-grained limestone, with few shells.
		Gypseous marl,	Red and white clays.
		Magnesian limestone,	Yellow, with local deposits of shells.
		Marl-slate,	Laminated calcareous rocks.
		Rothetodtliegende,	Red sandstone, with plants.
		Carboniferous System.	
Coal,	1000	Upper, Middle, Lower,	All consisting of sandstone, shales, &c. with beds of bed of coal, layers of ironstone, and deposits of plants.
Millstone-grit,	300	Upper, Middle, Lower,	Coarse and fine sandstones, shales, coal, ironstone, &c. with plants and shells.
Carboniferous Limestone, (North of England.)	600	Yordale rocks,	Limestones, grits, and shales, with coal, &c. and shells.
		Scar limestone,	Very thick limestone, shelly.
		Alternating red sandstones and limestones, with coal, &c.	
Old Red Sandstone, (Herefordshire.)	100 to 3,300	Conglomerates and sandstones, Coloured marls and cornstones, Flagstone beds,	A locally variable series of rocks, fossiliferous in the south of England.

* As seen near Bath. In other parts of England it offers important differences.

Names of Formations or Groups of Strata.	*Thickness in yards.*	*Subdivisions adopted.*	*Nature of the Deposits.*
		PRIMARY STRATA.	
		Silurian System, as it occurs on the border of Wales.	
Ludlow Rocks, .	660	Sandstones, ... Limestones, ... Shale.	Argillaceous sandstone, shelly. Shelly and coralloidal.
Wenlock Rocks, .	600	Limestone, ... Shale.	Abounding in zoophytes, trilobites, &c.
Caradoc Rocks, .	830	Shelly limestone. Shelly sandstone, &c.	
Llandeilo Rocks, .	400	Calcareous laminated beds,	With trilobites, &c.
		Grauwacké System, as it occurs in Wales.	
Plynlymmon Rocks, . .	unknown	. . . . .	Hard, slaty, fine or course grained rocks with few or no organic remains.
Bala Limestone,	unknown	. . . . .	Dark laminated, slaty limestone, with fossils.
Snowdon Rocks,	unknown	. . . . .	Hard slaty rocks, with (locally) few organic remains.
		Clay-slate System, as it occurs in Cumberland and Westmoreland.	
Clay-slate, .	unknown	. . . . .	Softer slaty rocks. No organic fossils.
Chiastolite-slate,	unknown	. . . . .	The same, with chiastolite. No fossils.
Hornblende-slate,	unknown	. . . . .	The same, with hornblende. No fossils.
		Mica-Schist System.	
Chlorite-schist, with Limestone,	unknown	. . . . .	Quartz-rock, &c. No organic remains.
Mica-schist, with Limestone,	unknown	. . . . .	Quartz-rock, &c. No organic remains.
		Gneiss System.	
Gneiss, with Limestone, . .	unknown	. . . . .	Quartz-rock, mica-schist, &c. No organic remains.

In England, *primary stratified rocks* are found only in Devonshire, Cornwall, Wales and some of the English counties on its borders, and in Westmoreland and Cumberland, and they impart to almost all of these districts a rugged and lofty aspect, which strikingly contrasts with the flatness and want of elevation so remarkable in other parts of the kingdom, where the secondary and tertiary rocks prevail. These primary rocks are chiefly limited to the *Clay-slate*, the *Grauwacké*, and the *Silurian Systems*, the two first of which extend over all the south of Cornwall and Devon, the northern portion of the latter county, a large portion of Wales north of St. David's Head, and west of the Silurian region on the Welsh border, and nearly the whole of the lake district of Lancashire, Westmoreland, and Cumberland. *Gneiss and Mica slate*, the most ancient of the stratified rocks, are almost unknown in England. Some traces of the systems to which they belong are seen in the Saddleback rocks in Cumberland, and more distinctly in the Isle of Man. The *secondary order* of rocks commences with those included in the *Carboniferous System*, which is most extensively developed in England, especially in the northern counties, and in South Wales, and parts of England adjacent to it. The northern portion occupies an area, the boundaries of which will be described by a line drawn from the neighbourhood of Newcastle-under-Lyne to Nottingham, from thence northward, with more or less of curvature to the mouth of Tyne, thence along the sea-coast and Scottish border, to the neighbourhood of Longtown in Cumberland, and from thence to Ravenstone-Dale, in Westmoreland, Liverpool, Ashton-under-Lyne, and Newcastle-under-Lyne. The great southern portion extends in a crescent-like shape, from St. Bride's Bay to Newport in Shropshire, and includes a large extent of South Wales, nearly the whole of Monmouthshire and Herefordshire, and part of Shropshire. Outlying groups belonging to this system also occur in several places, which will be noticed when we come to point out the situation of the different coal-fields. Referring to the preceding table for an enumeration of the formations included in the carboniferous system, it may be remarked, that the millstone-grit rocks which prevail to a great extent in the north of England, are little known in the southern carboniferous region, while, on the other hand, the old red sandstone formation, which is so enormously developed in the latter, is in the former limited to a few inconsiderable traces occuring principally in the neighbourhood of the Tweed. The *Saliferous*, or *New Red Sandstone System*, commences on the north-east, at the river Tyne, and skirts the northern carboniferous region, as far as the neighbourhood of Liverpool; it is bounded on the west by the silurian and carboniferous regions of the west of England, and on the east by the oolitic rocks, next to be described. It occurs also in the plain of Carlisle, on both sides of the upper portion of the estuary of the Severn, and in the valley of the Exe in Devonshire. Spread over so immense a space, and never rising to elevations much above 800 feet, the red sandstone system (Mr. Phillips remarks) folding its level surface round the broken coal strata, seems to be like the large uplifted bed of a shallow sea, full of rocky islands, and bounded by bold promontories. The magnesian limestone which constitutes one of its members occurs in several places on the borders of the coal strata, and principally in one almost unbroken line, extending from the mouth of the Tyne to Nottingham. The *Oolitic System*, named from the roe-like particles of some of its beds, occupies a zone nearly thirty miles in average breadth, extending from Yorkshire on the north-east, to Dorsetshire on the south-west, and including within its limits some of the best building materials in the kingdom. An included freshwater formation, named the Wealden, from its locality, extends over a large portion of Kent and Sussex. The *Cretaceous System*, or chalk deposit, is one of the most remarkable in England. It stretches with no material interruption (except in the neighbourhood of the Wash), from Flamborough Head in Yorkshire, to Sidmouth in Devonshire. From Salisbury Plain, one of its great central masses, it proceeds eastwards between the London and Isle of Wight basins, forms the North Downs in Surrey, and terminates at the Straits of Dover. It also appears on the northern coast of Norfolk, in the Isle of Thanet, and in the south of the Isle of Wight. The deposits which form the *tertiary strata*, consist chiefly of the argillaceous formations abounding in organic remains, named the plastic clay, and the London clay; these extend over Middlesex, the northern portion of Surrey and Kent

(with the exception of the Isle of Thanet, which is chalk), the whole of Essex and Sussex, and the greater part of Norfolk. A variety of the same formation also occurs in the district comprehended between Southampton on the north, Dorchester on the west, Newport in the Isle of Wight on the south, and Brighton on the east. The localities of the *post-tertiary* or *diluvial* and *alluvial deposi tions*, are too numerous to admit of being mentioned in a work like the present.

The *unstratified* or *ancient volcanic rocks*, do not cover the surface of England to any great extent but they are widely distributed. *Granite* is found in considerable masses in Devonshire, Cornwall and the lake district of Cumberland. It occurs to a small extent in Anglesea, the Isle of Man, the Scilly Islands, and Lundy Isle, the last but one of which are entirely granitic. *Sienitic Granite* ap pears in the Malvern Hills, and in the neighbourhood of the town of Mount Sorrel in Leicestershire *Trap* has been protruded through all the different stratified formations in the north, west, and south west of England; most extensively in the northern carboniferous counties, Cornwall, Devonshire, and Silurian region, and to a less extent in the south-western counties of South Wales, the south-weste portion of Caernarvonshire, in the Cumberland lake district, and in Anglesea. An elongated mass o it is found in the centre of Derbyshire, and it occurs in several parts of the new red sandstone forma tion in the centre of England, particularly in the south of Staffordshire, and north of Worcestershire The following is a list of the names and elevations of some of the principal granitic and trapea eminences throughout England; their localities will in most instances be found by a reference to ou Table of the British Mountains (see *anté*, pp. 163, 164.)

Granitic and Scienitic.—Brown Willy (Cornwall 1,368 feet; Butterton Hill (Devonshire) 1,203 ft. Carn Bonellis (Cornwall) 822 ft.; Cawsand Beacon (Devonshire) 1,792 ft.; Hensbarrow Beacon (Cornwall) 1,034 ft.; Kitt Hall (Cornwall) 1,067 ft.; Rippon Tor (Devonshire) 1,549 ft.; Sennen (Cornwall) 837 ft.; St. Stephen's Down (Cornwall) 605 ft.

Trapean.—Brown Clee Hill (Shropshire) 1,805 ft.; Cheviot (Northumberland 2,658 ft.; Hedgehop (Northumberland) 2,347 ft.; Plumstone Down (Pembrokeshire) 573 ft.; Base of Rodney's Pillar (Montgomeryshire), 1,199 ft.: Wreckin (Shropshire) 1,320 ft.

Leaving the extent of the importance of the mineral productions of England, as sources of national wealth, to be considered when we come to notice the Productive Industry of England, we shall at present briefly advert to their geographical distribution. In so doing, it may at the outset be remarked generally, that if the localities in which iron is found are not taken into account, the whole of the metalliferous and coal districts are situate to the west and north of a line commencing at Exmouth, in Devonshire, continued northwards through Tamworth to Tewkesbury, and from thence, with a moderate curvature, to the east through Stratford-on-Avon, Leicester, Nottingham, Newark, Gainsborough, and York, to the mouth of the Tees. The line thus described is remarkable in another respect, as it forms a sort of natural boundary between the agricultural and the manufacturing populations.

Coal, without the command of which the immense provision of metallic ores which England possesses would be comparatively valueless, is an important member of the carboniferous system of rocks, the development of which in England we have described in the preceding page. The beds in which it is deposited, or the *coal-fields*, admit of being arranged into three principal groups, occupying districts which may be named the Northern, Central, and Western. The *northern district* is situate to the north of the Trent and Mersey, and is traversed from north to south by the range of hills which form the central chain of England. It includes to the east of this chain the celebrated *Northumberland and Durham coal-field*, occupying the eastern sides of these counties, from the Coquet to the Tees; and the scarcely less important *South-Yorkshire, Nottingham and Derby coal field*, which extends from the neighbourhood of Leeds to Derby. To the west of the central chain the northern district embraces the *Whitehaven coal-field*, which is a small but valuable bed, extending northwards from Whitehaven to Maryport, and thence eastwards to the River Calder; another small field, but of little consequence, lying at the foot of *Ingleborough*; the great coal-field of *Manchester* or *South Lancashire*, extending from the south-west of Lancashire to the neighbourhood of Oldham and the important bed at *Cheadle* and *Newcastle-under-Lyne*, usually called the *Pottery coal-field* The central district contains three important though not very extensive deposits of coal, viz. the *Ashby-de-la-Zouch coal-field*, on the borders of Leicestershire and Staffordshire; the *Warwickshire coal-field* extending from the neighbourhood of Tamworth and Atherstone, on the north-west, to Coventry on the south-east; and the *Wolverhampton, Bilston, and Dudley coal-field* in the south of Staffordshire, from which locality in the county the field is sometimes denominated. The coal-fields in the western district admit of a treble subdivision, which may thus be stated:—1. *North-Western*—the *Anglesea coal-field*, about seven miles distant from the eastern extremity of that county, and intersecting the island in a direction parallel to the Menai Strait; and the *Flintshire coal-field*, which extends from the Point of Air, to the neighbourhood of Oswestry in Shropshire; 2. *Mid-Western*—the coal-fields in Shropshire, and on the borders of Gloucestershire, viz.—*Shrewsbury Plain; Colebrook Dale*, extending from Wombridge to Coleport on the Severn; *Brown Clee Hill* and *Titterstone Clee Hill*, to the south of Colebrook-Dale; *Billingsley* to the east of the Clee Hills, and stretching from Deuxhill to the borders of Worcestershire; and two small fields in the neighbourhood of *Pensax* and the *Abberley Hills* in Worcestershire; 3. *South-Western*—the great *coal-basin of South Wales* extending from Pont-y-pool in Monmouthshire on the east to St. Bride's Bay on the west; the *Forest of Dean coal-field*, a small but valuable bed in the west of Gloucestershire; and several small fields in the south-west of Gloucestershire, and north of Somersetshire, principally in a tract stretching from Iron-Acton in the former county, to the foot of the Mendip Hills. It would be difficult to state with accuracy the size of the whole area of the coal-fields in England and Wales, but its immense extent may be inferred from the fact, that the superficial extent of the coal-basin of South Wales alone, is estimated at 1,200 square miles. The Northumberland and Durham coal-field covers an area of 72 square miles, of which only about a seventh has as yet been excavated. The Yorkshire and Derby field measures 60 miles in length, by 26 miles in breadth, at its widest part; the Lancashire or Manchester field is 35 miles in length, and has probably an average breadth of 6 miles; the coal-field of Dudley is about 60 square miles in extent, and those of Whitehaven and Flintshire are not much inferior in size. The other fields which we have enumerated, are of various sizes, ranging from between 5 and 20 miles in length, and 2 to 8 or 10 miles in breadth. The total thickness of the coal-formation varies from 1,000 to 1,500 yards; but the total thickness of the included coal is generally only about 50 or 60 feet. In most districts the coal is divided into 20 or more beds, of a thickness from feet to a few inches, alternating with beds of sandstone and shale, from 20 to 100 times the same thickness; but at Ashby-Wolds, in the Ashby-de-la-Zouch field, the main coal is 17 to 21 feet thick; and in the Dudley and Bilston coal-field, the beds rest one upon another, so as to form apparently but on

seam, of the extraordinary thickness of from 30 to 45 feet in different places. In the Northumberland and Durham coal-field, the two seams known by the names High Main and Low Main, which are the thickest and most valuable in the district, are each 6 feet thick. In proportion to the enormous thickness of the coal formation, it has been penetrated in working only to a comparatively small depth. The coal-mine at Radstock, near Bath, which is said to be 409 yards in depth, has for long been considered the deepest mine in England; but there is a coal-pit, at Monk-Wearmouth, near Sunderland, the depth of which is 540 yards, and the latter is thus farther remarkable, that owing to the very inconsiderable elevation of the district in which it is situate, it is the deepest sinking *below the level of the sea* in the world. At Whitehaven, the coal is wrought at a depth of 298 yards from the surface, the workings being in some parts to a considerable extent beneath the bed of the Irish sea.

Iron, the most useful of all the metals, is found in England and Wales in quantities almost inexhaustible. Clay-ironstone, the most common variety of its ores, is an extensively diffused member of the coal formation; another ore, called the red hematite, occurs in Lancashire, in the new red sandstone formation; and there are found in great abundance throughout the upper portion of the oolites, the Wealden formation, and the London clay, imbedded masses of clay-ironstone, generally exhibiting cavities or chambers filled with calcareous spar, and hence named *septaria*. The ores commonly used in smelting generally produce from 27 to 40 per cent. of iron; that yielded by the hematite is peculiarly fine in quality, and fit for the manufacture of iron-plate and wire. The principal districts in which iron is made, are South Wales, Staffordshire, Shropshire, Yorkshire, North Wales, and Derbyshire. Of these the three first named are by far the most important; South Wales supplying little less than the half, Staffordshire one-third, and Shropshire probably a ninth part of the whole quantity of iron made in England and Wales. Yorkshire produces the next greatest quantity. Very little iron is made in Northumberland and Durham, as the coal-field of that district is remarkably deficient in ironstone. It is said, however, that at Hexham there is abundance of an ironstone, richer than any hitherto found in the coal-formation, as it will yield 50 per cent. of pure metal. At a former period much iron was made in Kent and Sussex, but since the substitution of coal for wood, in the process of smelting, the manufacture has been entirely transferred to the coal districts; its principal seats at present, are Merthyr-Tydvil, and adjoining places in the counties of Glamorgan, Brecknock and Monmouth; the district included between Wolverhampton, Dudley, and Walsall, in Staffordshire; and Colebrook-Dale in Shropshire.

The mountain limestone is the great depositary of the *lead* found in England, although in the north-east of Wales it also occurs in rocks of older formation. The most productive mines are situate at Allendale in Northumberland, Aldston, or Alston Moor, in Cumberland, and several other places in the upper valleys of the Tyne, the Wear, and the Tees; in the Peak and Kingsfield districts, in the north of Derbyshire; in Flintshire and Denbighshire, the north-east part of Wales; and in the western part of Shropshire. Lead-ore generally contains *silver*, which in some places is by an improved process extracted from it in considerable quantities. *Zinc* also is obtained from the blende, or sulphuret of zinc, associated with the lead; but is commonly made from calamine, its true ore, mines of which are found in the mountain limestone.

Tin is peculiar to the granitic and primary slate-rocks, and in this country is found only in Cornwall and Devonshire. Both these counties, especially the former, have long been famous for their tin-mines, the produce of which is sent to all parts of the world, and is competed with almost only by the tin procured from Banca, an Indian island in possession of the Dutch. Tin is never found in a pure metallic state. Its most common ore, called *tinstone*, an oxide of the metal, occurs either in veins intersecting the rocks we have already mentioned, or else in the form of grains, or water-worn pebbles (named by the miners *stream-tin*) in the sands of rivers and valleys, and some parts of the sea-shore.

Copper is found in granite, and in several of the older primary stratified rocks. In this country the great supply of copper is derived from Cornwall, but there are mines of it in Anglesea, and some other parts of Wales, and in Devonshire and Staffordshire; these, particularly the famous mine in the Parys Mountain, near Amlwch, in Anglesea, and that of Ecton in Staffordshire, were formerly very productive, but they now yield comparatively little. On account of the want of coal in Cornwall, and its abundance in South Wales, the Cornish copper ore is all carried to Swansea to be smelted.

Of the other mineral productions of England, we may enumerate *fossil*, or *rock salt*, vast beds of which, varying in thickness from 4 feet to 40 yards, are included in the upper marls of the new red sandstone, and which are extensively wrought in the neighbourhood of Northwich, in Cheshire; *alum*, which is manufactured in great quantities from the alum shale of the upper lias at Whitby, in Yorkshire; *fuller's earth*, found below the great oolite at Bath, and below the green-sand at Reigate, and other places in Surrey, which last district furnishes the greater part of the quantity used in the woollen-manufactures; *graphite*, or *plumbago*, commonly though improperly denominated black lead, a very rare mineral, the most celebrated mine of which in the world is found at Borrowdale, in Cumberland, in the Cumbrian or older grauwacké system; *antimony*, mines of which occur at Saltash in Cornwall, and Huel Boys in Devonshire; *manganse*, found principally in Devonshire, in the east of Cornwall, and in Warwickshire; lastly, *arsenic*, the oxide of which, used in commerce, is manufactured from the arsenical pyrites, or in reality, the arsenical iron accompanying the tin and copper ores of Cornwall. *Building-stone* is not abundant in England. Sandstone is used as a building and paving stone in all the coal districts, particularly in Cumberland, Northumberland, and Yorkshire; but the most esteemed varieties of building materials, are the *Portland stone*, and *Purbeck marble*, of the south of Dorsetshire, the first of which is an upper oolitic limestone, the other a freshwater limestone, of the Wealden formation; *Killaway rock*, a limestone of the oolitic group; and *Bath stone*, the lower, or great oolite. *Roofing-slate* is extensively quarried from the older grauwacké rocks in the north of Caernarvonshire, particularly near Bangor; in Cardiganshire, and other parts of South Wales; and at Ulverstone in Lancashire.

It is almost needless to add, that *limestone*, fit to be converted into mortar, or used as manure, is widely diffused over England; and that brick and pottery *clays* are found in great abundance in many places. Besides the substances already mentioned, England, from the diversified features of its geognostic constitution, produces a vast variety of other minerals, some of great intrinsic value (as *gold*, &c.;) but as these are found in inconsiderable quantities, they may be regarded only in the light of objects of experiment or curiosity.

The *mineral springs* of England are not numerous, but several of them are in many respects of considerable importance. The *brine*, or *salt springs*, at Northwich, Winsford, Middlewich, Wheelock, Nantwich, and other places in the valleys of the Weaver and Wheelock, in Cheshire, and those at Droitwich in Worcestershire, yield salt in immense quantities. Springs of a similar nature, though not turned to any productive account, are met with at Ashby-de-la-Zouch in Leicestershire, Shirleywich in Staffordshire, Builth or Bualth in Brecknockshire, and at Kingswood, near Bristol. Mineral springs celebrated for their medicinal qualities are found in many parts of England. The principal springs of this class, are those of Bath in Somersetshire; Bristol in Gloucestershire and Somersetshire (the spring being situate in the former county); Cheltenham in Gloucestershire; Tunbridge-Wells in Kent; Epsom in Surrey; Leamington in Warwickshire; Great Malvern in

Worcestershire; Llandrindod in Radnorshire; Matlock and Buxton in Derbyshire; Harrowgate in the West Riding of Yorkshire; and Scarborough, on the coast of Yorkshire. We add the names and temperature of such of the foregoing as are found in the state of *thermal*, or *hot-springs*:—Bath 114°, Buxton 82°, Bristol 74°, and Matlock 68°.

SOIL AND VEGETATION. — The soils in England may be classed under six general divisions, viz. Clay, loam, sand, chalk, gravel, and peat; but from the number and variety of their subdivisions, and their irregular and abrupt transitions, it is difficult to enumerate them, and still more so to mark with precision their positions. The largest tracts of a uniform soil are those in the central and southern districts of Norfolk, and in the *Wealds* of Kent, Surrey, and Sussex. The soil of the former consists of a rich clay, producing luxuriant crops of wheat; that of the Wealds is of a stiff clayey nature, fruitful, but unwholesome, on account of its great moisture. Red loam prevails in the county of Rutland; and it also passes with more or less of continuity into Nottinghamshire in a north-eastern, and into Devonshire in a south-western direction. The sandy tracts are far less extensive in England than in France. Many portions of Surrey are covered with beds of sand, particularly Bagshot Heath, in the north-west of the county. The same deposit occurs in several districts of the eastern and southern counties. It is met with also in a very pure state at Alum Bay and Headen Hill, at the western angle of the Isle of Wight. Peat soil is common in the north; but it is also observed, although in no great extent, in the south and south-west. An estimate of the extent of surface in England and Wales, either under cultivation or capable of being rendered productive, and of that which is unfit for the production of grain, vegetables, hay, or grasses, will be found in the following table.

	Arable and Gardens.	Meadows, Pastures, and Marshes.	Wastes capable of Improvement.	Wastes incapable of Improvement.	Summary.
	Square Miles.	*Square Miles.*	*Square Miles.*	*Square Miles.*	*Square Miles.*
ENGLAND,	16,020	24,030	5,397	5,089	50,536
WALES,	1,391	3,478	828	1,727	7,424
	17,411	27,508	6,225	6,816	57,960

The vegetation of England differs but little from that of the more genial countries of northern Europe. The extreme humidity of its climate, however, renders it better adapted for the growth than the ripening of the productions of the earth; hence the almost perpetual verdure of surface which, though familiar to the English themselves, so invariably excites the admiration of foreigners. Most of the trees valued for their timber or bark are found in England. The most common are the oak, ash, elm, beech, chesnut, larch, Scotch fir, and other varieties of the pine tribe; the maple, called also the plane-tree or sycamore, the lime, birch, alder, yew, hazel, willow, poplar, and, in the southern portion of England, the walnut and mulberry. The smaller trees and shrubs are the thorn, hornbeam, holly, box, black-thorn, and service. In the orchard are found the cherry, apricot, plumb, pear, and apple trees; while the produce of the garden includes a great variety of the smaller fruits and pot-herbs, many of the most generally used and valuable of the latter of which were first transported to England from Holland in the reign of Henry the Seventh. The vine was formerly cultivated in England; and, during the thirteenth and fourteenth centuries, wine was made in considerable quantities. There are still in Devonshire two or three vineyards, from the produce of which wine is made. Wheat is the principal object of culture in the south-east; barley is raised chiefly in the midland and eastern counties; and oats in the fenny tracts of the latter, and also in the north. Rye is not so common as formerly. Some partial attempts were made a few years ago to introduce the culture of a dwarf species of maize or Indian corn; but the cloudiness of the atmosphere proved unfavourable to the ripening of the grain. Peas, beans, tares, clover, and saintfoin, are spread over almost every district. The potato thrives in Lancashire and Cheshire, and the turnip in Norfolk, from which county its culture has extended all over the kingdom, and principally to the north. Hops are cultivated in Kent, Surrey, Worcestershire, and Herefordshire; those of Farnham, in Surrey, are reckoned the best. Hemp and flax are reared in inconsiderable quantities, although of excellent quality, in Suffolk and Lincolnshire. Rape is much cultivated in the last named county, and also in Cambridgeshire.

England, from a very remote period, has been celebrated for its extensive *forests*. These, however, gradually yielding to the demand for timber and the progress of

agriculture during the last two centuries, have now in a great measure disappeared. As many of them still give names to districts of some note, we shall here enumerate several of the most remarkable, commencing with those which are the property of the Crown.

The existing royal forests, stated in the order of their importance, as sources of revenue, are—*New Forest*, *New Park*, and *Parkhurst*, in the south west of Hampshire; *Dean Forest*, and *Highmeadow Woods*, on the west of the Severn in Gloucestershire; *Whittlebury* and *Salcey*, in the south-east of Northamptonshire; *Gillingham*, *Meopham*, and *Shooter's Hill* woods, in the north-west of Kent; *Alice Holt*, *Woolmer*, and *Bere*, in the south-east of Hampshire; *Whichwood*, in the south-west of Oxfordshire; *Hainault*, or *Waltham*, in the south-west of Essex; *Windsor*, in the south-east of Berkshire; *Chopwell* woods, in the north of the county of Durham; *Delamere*, in the hundred of Eddisbury, in Cheshire; *Sherwood*, or *Shirwood*, in the central or western part of Nottinghamshire; and *Lanercost Priory Woods*, in the north-east of Northumberland.

Of the other ancient forest districts, many of which were formerly crown possessions, few remain in a state of woodland, and these chiefly in the south and west of England. The most noted are—*Martindale*, *Milbourn*, *Lime*, and *Stainmore*; the first in the north, and the remaining two, in the east of Westmoreland; *Wyredale* and *Bowland*, in the central and western part of Lancashire, bordering on Yorkshire; *Galtrees*, *Pickering*, *Hardwick*, *Arkengarthdale*, *Knaresborough*, *Wharfdale*, *Suynden*, *Okeden*, *Harlow*, *Fulwith*, *Coverdale*, and *Hatfield Chase*, situate principally in the North and West Ridings of Yorkshire, also the *Ainstey of York*, between the Ridings; *Peak Forest*, in the north-west of Derbyshire; *Needwood*, in the north-east of Staffordshire; *Charnwood*, in the north-west of Leicestershire; *Wyre*, in the north-west, *Feckenham*, in the central and eastern part, and *Malvern Chase*, in the south-west of Worcestershire; *Arden*, in the central and western parts of Warwickshire; *Leighfield*, in the south-west of Rutlandshire; *Rockingham*, in the north-west of Northamptonshire; *Bernwood*, in Bucks; *Epping*, in the south-west of Essex; *Enfield Chase*, in the north-east of Middlesex; *Exmoor*, in the south-west of Somersetshire; *White-Hart*, in Dorsetshire; *Bradon*, in the north, and *Savernake*, in the central and eastern parts of Wiltshire, also in the same county, *Blackenore* or *Melksham*, *Pewsham* or *Chippenham*, *Pannshill*, *Melshett*, and *Cranbourne Chase*; lastly, *St. Leonard's*, and *Ashdown*, in the north of Sussex.

The most extensive of the royal forests are, New Forest (66,942 acres), Dean Forest (23,015 acres), Woolmer Forest (5,945 acres), Whittlebury Forest (5,424 acres), Windsor Forest (4,402 acres), Delamere Forest (3,847 acres), and Whichwood Forest (3,709 acres.) The entire extent of the royal forests, enclosed and bearing oak, exceeds 50,000 acres, of which Dean Forest includes 11,000, New Forest 6,000, Windsor Forest 4,402, Whittlebury Forest 3,895, and Delamere Forest 3,847 acres. It is difficult to estimate the entire extent of the forests and woodlands in England. In the French abridgment of Malte Brun's Geography it is stated, though on what authority we are not aware, that the whole woodlands of Great Britain and Ireland cover 1,480,000 arpens, equal to 1,869,952 acres, or 2,921 square miles. This estimate, if at all correct, would show that England contains a very great extent of timber-bearing land, as the whole extent of natural woods and plantations in Scotland does not exceed from 950,000 to 1,000,000 acres, and as Ireland, though formerly very thickly wooded, is now comparatively destitute of timber.

ANIMALS.—As the animal kingdom in England is nearly similar to that of other countries between corresponding parallels, the various species of which it is composed need not be minutely enumerated. The wolf and wild boar have long since been extirpated; and the beaver, and probably the wild ox, have also disappeared* The stag, in its natural state, is very rare, and the few of the species that still remain are found only on the borders of Cornwall. The fallow-deer kept in parks is of foreign origin. The most common game-animals are the hare, partridge, and pheasant. The red grouse is found in the north of England; the black cock in the New Forest, in Wales, and also in Hampshire; the ptarmigan occasionally on the lofty hills of Wales and Cumberland; and the bustard, although very scarce, still exists on Salisbury Plain, in the neighbourhood of Dorchester and Newmarket, and in the Yorkshire Wolds. The wild duck abounds in the fens of Lincolnshire. With regard to the migratory birds, the turtle-dove appears in greater numbers in Kent than in any other county. The nightingale, common in the south, is rare in Yorkshire; and it is believed is not heard to the north of that county. The woodcock is gradually disappearing before the progress of cultivation; the starling, however, still appears in its favourite haunts, particularly in the fens of Lincolnshire, and that in perhaps denser flocks than any of the other birds. Salmon, the most valuable of the fish that frequent the English rivers, is more abundant in the Tweed than in any of the other streams. Herrings are taken in many parts of the eastern coasts, and principally in the neighbourhood of Yarmouth; they are found also on the western coast, but not in so great numbers. The mackerel fisheries are confined to the coasts of Norfolk and Hampshire. To the north of Yarmouth mackerel are not so plentiful; and they are neglected to the westward of Hampshire, on account of the greater importance of the pilchard fishing, which is carried on along the coasts of Dorset, Devon, and Cornwall. Oysters are found on many parts of the Channel and Welsh coasts, particularly

* The type of the English ox is said to be preserved at Chartley Park in Derbyshire, and at Chillingham Castle in Northumberland.

in the line of coast between Chichester and Southampton, and in the neighbourhood of Poole in Dorsetshire, and Port Eynon or Einion in Glamorganshire, from the latter of which places the supply required for the Bristol, Bath, and Gloucester markets is procured. They are also bred and fattened in vast numbers for the London market in beds formed at the mouths of the rivers Crouch, Blackwater, and Colne in Essex, the channel of the Swales in Kent, and in several other places within the estuaries of the Thames and Medway, the fish used in these operations being brought from Wales, the Channel coast, the island of Jersey, and, of late years, from the Mid-Lothian side of the Firth of Forth in Scotland. Cod and lobsters are taken on the north-eastern coast; and of the turbot fisheries, the most important are those on the coasts of Norfolk, Suffolk, Essex, and different parts of the Channel. The domestic animals of England are, generally speaking, superior to those of any other country. The race-horse has been improved with the best blood of Arabia. Of the draught-horses, the three best sorts are, the Cleveland bay, bred in many parts of Northumberland and Durham, as well as in the vale or district in the north-east of Yorkshire, from which its name is partly derived; the Suffolk punch, generally used in the light and sandy lands of Norfolk and Suffolk; and the old English black or Lincolnshire cart-horse, common in Leicestershire, Northamptonshire, Lincolnshire, and some of the neighbouring counties. The oxen of Devonshire have long been famous both for fattening readily, and for their power as draught animals. From them are derived the *old red cattle* of Gloucestershire; also the Hereford and Sussex breeds, the latter of which are supposed to be the best in the kingdom for draught. The native country of the long and short-horned oxen is to be found between the northern limits of England and the Trent and Mersey; from the former have been derived a new and valuable variety called the Leicester-breed, and the latter includes the Teesdale, Lincoln, Holderness, and Tweedside oxen, the largest of any in Britain. Sheep are divided into two classes, the long and the short-woolled, the fleece of the former being better adapted for woollen goods, the latter for the fabrication of worsted. The long-woolled sheep, although common in many districts, are more numerous on the eastern and southern coasts than on the western coast, or in the central counties; the short wools are more scattered, and they are divided into different kinds, viz. the Norfolk, South Down, Wiltshire, Herefordshire, the heath-sheep, and the Cheviot or mountain breed. The ordinary varieties of pigs are the Berkshire, the Gloucestershire, and the Rudgwick, so called from a town of the same name in Sussex.

PEOPLE AND LANGUAGE. — At the period of the Roman conquest, in the first century of the Christian era, England was possessed by various tribes, who appear to have belonged chiefly to the Cymry race, supposed by some to have been Celts, and by others an intermediate people between the Gothic and the Celtic stocks. Their descendants still form the bulk of the population of Wales and Cornwall. Their language, however, has been completely extinct in Cornwall for nearly a century; but in Wales it is still employed by the rustic population. At the same epoch, the south-eastern counties were occupied by the Belgæ, a branch of the great Teutonic family, from Gaul, who had dispossessed the Cymry, and driven them into the interior. After the downfall of the Roman dominion, the south-eastern and midland counties were subdued and occupied by the Jutes and Saxons, and Norfolk and Suffolk by the Angles; while the northern counties were frequently overrun, sometimes possessed, and largely colonized by the Danes; all of them kindred families of the Gothic or Teutonic race. In the eleventh century, England was subdued by the Norman-French, who gradually intermixed with the Saxons, Angles, Jutes, and Danes, and formed, by the intermixture, the modern English people, and the English language. The people of many counties had, till lately, each a dialect peculiar to themselves; but, by the general diffusion of education, the language is now becoming nearly uniform over the whole kingdom. The groundwork of the language is still Saxon; but the words of Saxon origin have, of late, been rapidly giving way to others of French, Latin, and Greek extraction. In short, the modern English people are of a very mixed origin, and their language, from that circumstance, contains probably a greater number of different elements than any other of the modern tongues. For farther illustrations of these topics, our readers are referred to the account of races and languages already given in the general description of Europe. (See *anté*, p. .)

Before concluding these remarks, however, we must advert to a process of immigration now in action, which has already had a great, and promises to have a still greater influence on the blood and character of the people both of England and of Scotland, viz. the late extraordinary influx of Irish or Celtic labourers into Britain.

It is believed that at present about a fourth part of the population of Manchester and Glasgow consists either of native Irish or their descendants; and in various other places the proportion is still greater. The pernicious consequences, both as regards the condition and habits of the British labourer, which are likely to follow this vast influx of necessitous individuals, have been forcibly pointed out by Mr. M'Culloch, in his "Statistics of the British Empire." To his book we refer our readers for farther information on this subject. Our main object in bringing the fact under notice at present, will be effected if it should be the means of throwing any light on the disproportionate rates of mortality in the manufacturing and rural districts, which will come under consideration in the succeeding paragraphs.

POPULATION.—The only means of estimating the amount of the population of England and Wales, prior to 1801, are the enumerations in Domesday Book, the returns obtained under the poll and hearth taxes, and the registers of births and deaths; but none of these afford data from which it can be ascertained with much certainty. Mr. M'Culloch conjectures, that at the era of the Conquest the population of England and Wales may have amounted to 2,150,000, or thereabouts; Mr. Chalmers estimates its amount, at the epoch of the poll-tax in 1377, at 2,350,000; and the celebrated political arithmetician, Gregory King, founding his estimates on the returns obtained under the hearth-tax previous to 1696, states the entire population that year to be 5,500,000. Since 1801, a regular census of the population has been taken decennially. The following Table exhibits the gradual progress of the population since 1700 (the whole of the succeeding century, till 1801, being, however, only conjectural), as computed by Mr. Howell:—

1700,	5,475,000	1770,	7,428,000
1710,	5,240,000	1780,	7,953,000
1720,	5,565,000	1790,	8,675,000
1730,	5,796,000	1801,	8,872,980
1740,	6,064,000	1811,	10,150,615
1750,	6,467,000	1821,	11,978,875
1760,	6,736,000	1831,	13,897,187

Another table for the same period has been drawn up by Mr. Finlaison, of which the following are the results, including the army, navy, and merchant seamen, belonging to Great Britain:—

1700,	5,134,516	1770,	7,227,586
1710,	5,066,337	1780,	7,814,827
1720,	5,345,351	1790,	8,540,738
1730,	5,687,993	1800,	9,187,176
1740,	5,829,705	1810,	10,407,556
1750,	6,039,684	1820,	11,957,565
1760,	6,479,730	1830,	13,840,751

We complete the statements given in the four concluding lines of the first of the two foregoing tables, by a summary of the results of the four enumerations of the population, including the army, navy, and mercantile marine, that have been made during the present century, showing the rates of its increase in each decennial period, and distinguishing the actual numbers and increase of females, exclusively, as found at each enumeration.

	1801.	1811.		1821.		1831.	
	Number.	*Number.*	*Increase per cent.*	*Number.*	*Increase per cent.*	*Number.*	*Increase per cent.*
ENGLAND,.....	8,331,434	9,538,827	14.5	11,261,437	18.	13,091,005	16.2
WALES,.....	541,546	611,788	12.9	717,438	17.2	806,182	12.3
Army, Navy, &c...	470,598	640,500	..	319,300	..	277,017	..
	9,343,578	10,791,115	15.4	12,298,175	13.9	14,174,204	15.2
Females,.....	14,627,867	5,289,884	14.3	6,153,072	16.3	7,125,997	15.8

Mr. Finlaison calculates, that in May 1841 the total population of England and Wales will be 7,983,652 males and 8,143,910 females; together, 16,127,562. At present (1839) it may be about 15,500,000.

The following statement, to which we may afterwards have occasion to refer i our notices of the several portions of the United Kingdom, shows the total number o persons, distinguishing males from females, who were living in England, Wales, Scot land, Ireland, the Channel Islands, and the Isle of Man, at the enumeration of 1831:—

	Males.	*Females.*	*Total number of Persons.*	*Males 20 Years and upwards.*
ENGLAND,	6,376,627	6,714,378	13,091,005	3,199,984
WALES,	394,563	411,619	806,182	194,706
SCOTLAND,	1,114,816	1,250,298	2,365,114	549,821
Army, Navy, &c.	277,017	.....	277,017	.....
Total of Great Britain,	8,163,023	8,376,295	16,539,318	3,944,511
IRELAND—				
Leinster,	927,877	981,836	1,909,713	463,933
Munster,	1,093,411	1,133,741	2,227,152	542,200
Ulster,	1,113,094	1,178,528	2,286,622	540,479
Connaught,	660,498	683,416	1,343,914	319,133
Total of Ireland,	3,794,880	3,972,521	7,767,401	1,867,765
Total of Great Britain and Ireland,	11,957,903	12,348,816	24,306,719	5,812,276
Island of Guernsey, &c.	11,983	14,145	26,128	6,226
Jersey,	17,006	19,576	36,582	8,747
Man,	19,560	21,440	41,000	9,630
Total of Channel Islands, &c,	48,549	55,161	103,710	24,613
Total of the United Kingdom,	12,006,452	12,403,977	24,410,429	5,836,889

Our notices regarding the *distribution of the population*, and the *division of occupations among th people*, must necessarily be but brief. Mr. M'Culloch has ascertained that nearly a third part of th population of England and Wales resided, in 1831, in towns having a population of about 10,000 an upwards; and that in the ten years preceding that period, the population of the great towns ha increased at the rate of nearly 23 per cent., or about 9½ per cent. above the ratio of the increase of th rural population, including the smaller class of towns, and 7 per cent. above that of the entire popu lation. These results are not materially, if at all at variance with the statements in the followin table, constructed by Mr. Marshall, in which, however, the population in 1831 is stated upwards o 7,000 short of its actual amount:—

	Population in 1821.	*Population in 1831.*	*Increase per cent.*
Mining Districts,	1,028,078	1,339,856	31
Manufacturing Districts	2,378,363	2,984,101	25.5
Metropolitan and City Districts,	2,904,266	3,463,288	19
Inland Towns and Villages, exclusively agricultural,	5,668,168	6,102,430	7.3
	11,978,875	13,889,675	16

Prior to the year 1831 several attempts were made, without much success, to ascertain the relati numbers of persons engaged in agriculture, and those following other occupations. In the census o that year, however, an enumeration was made of all the males 20 years of age and upwards, and also with this, a return was obtained of their several occupations. It then appeared, that in all Englan and Wales the number of these individuals was 3,394,690, of which 1,075,912, or 31.6 centesimal par of the whole number were engaged in agriculture, 1,327,727, or 39 centesimal parts, in trade and manu factures, and 991,051, or 29.4 centesimal parts, were returned as belonging to "other classes." Of of the latter so designated, 185,187 were described as capitalists, bankers, and professional and othe educated men, 532,521 as labourers employed in labour not agricultural, 200,569 as other males, ex cept servants, and 72,774 as male servants. To use Mr. Porter's words, in his remarks on the re turns for the whole of Great Britain, adapting the statement in this instance, however, to those fi England and Wales alone, "it may thus be seen how very small is the proportion of persons arriv at maturity who are not employed in some one or other of the occupations, whereby the sum of th national wealth or convenience is advanced. Without making any allowance for the superannuat and infirm, it appears, that profitable, and for the most part manual occupations, may be assigned 3,008,934 persons out of 3,394,690, being a proportion of 886 in every 1000 males twenty years of a in England and Wales; while among the remaining 385,756 are to be found a large proportion who professional labour is essential to the health, the instruction, the convenience and the security their fellow-citizens."*

A general and uniform system of *registration of births, deaths, and marriages*, whic was established by the legislature in 1836, has now been in operation throughou England and Wales for upwards of a year; and while it has already begun to clear u much of the obscurity in which many points connected with the statistics of popul tion are involved, its workings prove most incontestably the defects of the form

* The Progress of the Nation. Section I.

registers, and the worthlessness of many of the inferences drawn from their contents. It cannot, for instance, be doubted that, whatever be the causes, an extraordinary improvement in the general health of the mass of the people has taken place during the last half century; but the accuracy of the generally received statement, founded on the authority of the church registers of burials, that the *rate of mortality* in England and Wales, which in 1780 was 1 in 40, was reduced to 1 in 45 in 1790, to 1 in 48 during the five years ending with 1800, to 1 in 51 during the five years ending with 1810, to 1 in 57 during the five years ending with 1820, and that at present it is about 1 in 57 or 58, may reasonably be called in question, when we find the deaths recorded during the first year of the operation of the new registration law amount to 335,956,* or about one in 46 of the entire population, reckoning the same (in 1837–8) at fifteen millions and a half. The remarkable discrepancy which we have just now pointed out, cannot be accounted for on the supposition of any great increase of late, either in the rate or the amount of mortality. There is indeed reason to believe, that though, in consequence of the improved condition of the people as to food and clothing, the draining of marshes, and other favourable causes, mortality, and of course sickness, progressively declined in England down to the period between 1816 and 1820, that it has been on the increase ever since; a circumstance mainly to be attributed to the increase in the populations of the manufacturing towns, which has been the means of bringing together masses of badly fed and worse lodged individuals, including great bodies of immigrant Irish, most of whom are content to live in filth and misery. Accordingly, we find a great disparity, both in the rates of mortality and the state of longevity, in the manufacturing and rural districts. From a statement appended to the First Report of the Registrar-General, it appears that out of a population of 3,553,161, concentrated in city districts upon 747 square miles, the deaths in the half-year ending December 31, 1837, amounted to 47,953; while out of a population of 3,500,751, distributed over an area of 17,245 square miles, the deaths were only 34,074. In London and its vicinity, the proportion who have died at seventy and upwards, is 104 in 1000; but as the metropolis is acknowledged healthy, and its inhabitants long-lived, we must look for a reduction in other great towns. In Birmingham we find the number 104 reduced to 81, in Leeds to 79, and in Liverpool and Manchester taken together, it falls as low as 63, or less than the half of the number for the whole of England and Wales, which is 145.

Turning to rural districts, we find that out of 1000 deaths, the proportion at the age of 70 and upwards has been 192 in Devonshire, 198 in Cumberland, and as high as 210 in North Yorkshire. Again, in regard to infants, we find that in Leeds and its neighbourhood, and in the mining districts of Shropshire and Staffordshire, out of 1000 deaths, 270 are those of infants under one year; this is also the proportion in the lowlands of Lincolnshire, Cambridgeshire, and Huntingdonshire; whereas in the north of England, in Wiltshire, Dorsetshire, Devonshire, Herefordshire, Monmouthshire, and in Wales, the proportion is only 180.

The registration of births is as yet imperfect, consequently we have not at present the means of ascertaining accurately the *proportion of male and female births*; it is believed that in England the former is to the latter as 19 to 18. The *average fruitfulness of marriage* is considered to be about 420 births to each 100 marriages, or 4.2 births to each marriage. The returns of the Registrar-General throw much light on the *probable duration of life as regards the two sexes*. There is a large excess in the deaths of male infants under one year, which diminishes up to the age of ten, when the proportion of female deaths becomes larger, and continues to exhibit an excess in the deaths over those of the males till fifty, after which age women have an advantage, which they retain, — the number of women living to ninety and upwards being to men in the proportion of 116 to 75.

In regard to the *proportion of ages to the population*, it would appear, from a calculation founded on returns obtained in 1821, that in a population of 10,000,000 there will be living of both sexes

	Persons.		*Persons.*
Under Five Years, . . .	1,487,339	From 50 to 59 Years, . . .	659,373
5 — 9	1,306,958	60 — 69	456,470
10 — 14	1,113,869	70 — 79	227,602
15 — 19	992,487	80 — 89	62,581
20 — 29	1,573,611	90 — 99	5,254
30 — 39	1,180,522	100 and upwards, . .	179
40 — 49	963,755		
		Total,	10,000,000

* The probable number of burials registered by the Established Church the same year was 291,715. This number would indicate a mortality of about 1 in 53.

RELIGION, AND ECCLESIASTICAL DIVISIONS.—The religion of England is, like the people themselves, very various in form and doctrine. The Established National Church is a compound of Calvinism and Arminianism in doctrine, and Episcopalian in its ritual and form of government. Roman Catholics are found in considerable numbers in different districts of the country, and Protestant dissenters of every variety abound everywhere. There is also a number of Jews in London, and a few in the other large towns. All sects and denominations enjoy the utmost freedom of opinion; and, with the exception of the Jews, have the same political privileges. The religious tenets of these various bodies are described in a former portion of this work. See p. 118, *et seq.*

In respect to the *Established National Church*, England and Wales are divided into into two archiepiscopal provinces; which are subdivided into two archbishoprics, and twenty-six bishoprics. Each of these again is farther subdivided into archdeaconries, each archdeaconry into deaneries, and each deanery into parishes—the number of the last amounting to 10,674. The *province of Canterbury* comprises the archbishopric of that name, and the bishoprics of London, Winchester, Ely, Lincoln, Rochester, Lichfield and Coventry, Hereford, Worcester, Bath and Wells, Salisbury, Exeter, Chichester, Norwich, Gloucester and Bristol, Oxford, Peterborough, in England; with Bangor, Llandaff, St. Asaph, and St. David's, in Wales. The *province of York* comprises the archbishopric of York, and the bishoprics of Carlisle, Chester, Durham, Ripon, Sodor and Man, and Manchester.* All the archbishops and bishops, except the Bishop of Sodor and Man, are Lords of Parliament. The Archbishop of Canterbury is styled Primate and Metropolitan of all England; the Archbishop of York, Primate and Metropolitan of England only. Besides their function as primates and archbishops, both of them perform the ordinary duties of bishops within their respective dioceses of Canterbury and York. The possessions attached to the different sees, whether consisting of land or other property, differs in no respect from lay possessions, and it is in right of these that the prelates sit in Parliament.

From returns laid before Parliament, it appears, that the net *annual revenue of the Established Church* applicable to the support of the clergy, is nearly three millions and a half sterling, the aggregate amount of the *incomes of the prelates* (27 in number) being £160,290; of the dignitaries, and other clergy connected with the *cathedrals and collegiate churches*, £252,999; and that of *incumbents of benefices*, £3,004,721. Of the several archiepiscopal and episcopal sees, the largest emoluments are attached to those of Canterbury and Durham, and the smallest to that of Llandaff, the annual revenue of the two former being severally £19,182 and £19,066, and that of the latter £924. These and similar inequalities, however, are to be removed as soon as that can be done without prejudice to existing holders. Deductions are to be made from the revenues of the wealthier sees, and those at present under £4,000 a-year are to be augmented to that amount. The incomes of the cathedral deans and prebends (228 in number) vary from £4,800 to £50 per annum, averaging on the whole about £800 a-year. The *number of benefices* is 10,540, dividing equally among which the income we have already stated (£3,004,721), an average would be got of £285. Their classification is as follows:—

Incomes.	*Benefices.*	*Incomes.*	*Benefices.*
Under £50	297	£400 and under £500	830
£50, and under 100	1,629	500 — 750	954
100 — 150	1,602	750 — 1,000	333
150 — 200	1,354	1,000 — 1,500	134
200 — 300	1,979	1,500 — 2,000	32
300 — 400	1,326	2,000 and upwards,	18

In the Church Commissioners' Report, the number of *stipendary curates* is stated to be 5,220; of these 1,006 were employed by resident, and 4,224 by non-resident incumbents. Their stipends are, of course, deductions from the income of the benefices.

The patronage of benefices in England and Wales is variously distributed: the Crown presents to 952, the archbishops and bishops to 1,248; the deans and chapters, or ecclesiastical corporations, aggregate, to 787; dignitaries, and other ecclesiastical corporations, sole, to 4,851; universities, colleges, and hospitals, not ecclesiastical, to 721; private owners, to 5,096, and municipal corporations, to 53.

There were throughout all England and Wales, in 1831, 11,825 *churches and chapels belonging to the establishment*, and 8,446 *dissenting congregations*. Of the latter 416 were Roman Catholic, 197 Presbyterian, 1840 Independent, 1201 Baptist, 427 Calvinistic Methodist, 2,818 Wesleyan Methodist, 666 Methodist of other descriptions, 396 were Quaker, and 453 consisted of Home Missionary and other stations. Many additional places of worship must have been opened during the intervening period; but in the absence of any collected account of these additions, and of statements of the attendance in 1831, it is impossible to frame what, in many respects, would be very desirable, viz. an accurate estimate of the *number of individuals belonging to the established church and the dissenters*. Mr. M'Culloch is inclined to think that the entire number of dissenters in England and Wales does not exceed 2,700,000, or at most 3,000,000. The latter number is no doubt pretty near, though perhaps under the mark. The Roman Catholics amount at least to 600,000, and the Methodists

* The bishopric of Manchester is only provided for by Act of Parliament, but not yet actually constituted.

of every description are known to exceed 1,200,000. If we accede to the claims of the "Orthodox Dissenters of the Three Denominations" (as the associated body of Presbyterians, Baptists, and Independents are called) to have an attendance at least equal to the Methodists, and add 150,000 as the probable number of the remaining dissenters, we shall have a total of 3,150,000. On the whole, we shall not greatly err if we adhere to the larger number in Mr. M'Culloch's estimate; and let it be remarked, that this indicates the attendance, in dissenting places of worship, of a third part of the entire population aged fifteen and upwards.

EDUCATION.—There is no national establishment for elementary education in England, everything having been left to private exertion, or individual beneficence. Boys receive a classical education, either in the smaller schools established in every town of consequence throughout the kingdom, or at the great public schools; the principal of which are at Eton, Westminster, Winchester, Harrow, Charterhouse, and Rugby. These seminaries, at present so expensive, and attended only by youths of the highest families, had their origin in funds bequeathed for the education of poor scholars. These have served as the bases of costly superstructures, each school having attracted, by the advantage of its situation, or the celebrity of its teachers, a large number of pupils in independent circumstances. In each great school, however, a proportion of the scholars are still placed on the foundation, and educated gratuitously. These schools are all preparatory to the great National Universities, the two most ancient of which are those of Oxford and Cambridge. To these have lately been added the University of London, consisting of two colleges, founded and endowed by private subscription, and named the University College, and King's College; the Durham University, founded and endowed by the Bishop and Chapter of Durham; and St. David's College, at Lampeter, in South Wales, founded by Dr. Burgess, late Bishop of St. David's, for the education of Welsh clergymen. There are, besides, various colleges established by the Dissenters for the education of the clergy and other members of their own body; those of Haileybury, and Addiscombe for young gentlemen destined for the East India Company's service; the Royal Military College at Sandhurst; and several others.

No country in the world can rival England in the magnificence of her academical buildings. In Oxford and Cambridge, every college possesses a large, commodious, and generally an elegant structure; University College, London, consists also of a large and costly building; and its rival, King's College, forms the eastern wing of the large pile of building called Somerset House. These two were founded recently by private subscription; but the colleges of Oxford and Cambridge have in the course of ages, acquired large funds and extensive estates, the destination of which is regulated by the bequest of the donor, and by established usage. Part of the funds is given to the students under the name of exhibitions or scholarships; part to the master and fellows; and a further part consists of church livings, which devolve in succession on the fellows, and remove them from the University. Oxford has nineteen colleges and five halls; Cambridge has twelve colleges and four halls. A hall is a minor college, an academical establishment not incorporated or endowed, but possessed of exhibitions, or other provisions for students. The entire annual revenue of the University of Oxford is £174,670; that of Cambridge, £149,268. One of the sources of the revenues of the two senior Universities is the profits of their printing-presses and book trade. These, on the most moderate computation, may be stated at £10,000 per annum for Oxford, and half that sum for Cambridge. The annual incomes derived from the revenues of Oxford and Cambridge are, on the average of both Universities, thus apportioned: Heads of Colleges, £754.3; Fellows, £205.3; University Scholars, £46.2; College Scholars, £15; Professors, £184.2; and Lecturers, £98.7.

"The total incomes," Mr. Jones observes, "of the Universities of Great Britain and Ireland (exclusive of the Universities of London and Durham) may be estimated at £500,000; and if to this be added the tuition money and the value of the benefices, the total amount disposable by the Universities is about £800,000 per annum, which is in reality only a small sum when compared either with the annual budget and revenues of the country, or with the paramount importance of superior education to a great and intelligent nation."*

In England and Wales, *primary instruction* is furnished principally by "Sunday Schools," of the class first established in Gloucester in 1781 by the benevolent efforts of Mr. Robert Raikes, a printer, of that place,—by the schools under the superin-

* Statistics of the Universities of Great Britain, read before the British Association at Newcastle, 1838.

tendence of the "Society for promoting the Education of the Poor in the principles of the Established Church," — and by those belonging to the "British and Foreign School Society." The Sunday schools are attended both by children and adults; and though intended principally for the communication of religious instruction, in many of them reading and writing are also taught. The National Schools are conducted on the principles of the Madras system, devised by the late Dr. Bell; the British and Foreign Society adopt the system of Joseph Lancaster, through whose exertions the society originated in 1810. The former society is, as may be inferred from its title, supported only by members of the Established Church, and the religious instruction given in its schools is conformable. The latter consists both of churchmen and dissenters, and no catechism or creed is allowed to be used in any of its schools. It is said, that at present upwards of 1,100,000 children attend the day and Sunday schools of the National Society; but the number of children attending these and other schools has of late been the subject of many conflicting statements. Nor is the information to be derived from the most recent returns to Parliament of a more precise nature, so very imperfect is the administrative machinery through which these were obtained. According to the returns made to the Education Inquiry in 1833, at which period the population was estimated at about 14,300,000, and the number of children between the ages of three and fifteen at 4,294,000, the number receiving instruction in Sunday schools was 1,548,890, and in day-schools 1,276,947; the latter number, however, is for the most part made up of the children attending Dame and common Day-schools, where the instruction conveyed is of the most worthless, and, in some instances, most pernicious description.* On the whole, it may be remarked, that in respect to general education, England falls short of many of the other European states, especially such as profess a nearly kindred protestant faith. In proof of this we quote the following table, which exhibits the —

Proportion in various Countries of Scholars in Elementary Schools to the whole Population.†

	Pupil.	*Inhab.*		*Pupil.*	*Inhab.*
Thurgau, Switzerland (1832),	1	in 4.8	Bavaria (1831),	1	in 8
Zurich, Switzerland (1832),	1	— 5	Austria (1832),	1	— 10
Argau, Switzerland (1832),	1	— 5.3	Scotland (1834),	1	— 10.4
Bohemia (1833),	1	— 5.7	Belgium,	1	— 11.5
Wurtemburg,	1	— 6	England,	1	— 11.5
Prussia (1838),	1	— 6	Lombardy (1832),	1	— 12.6
Baden (1830),	1	— 6	France,	1	— 17.6
Drenthe (Province of), Holland (1835),	1	— 6	Ireland,	1	— 18
Saxony,	1	— 6	Roman States,	1	— 50
Overyssel (Prov. of), Holland (1835),	1	— 6.2	Lucca,	1	— 53
Neuchatel (Canton of), (1832),	1	— 6.4	Tuscany,	1	— 66
Friesland (1833),	1	— 6.8	Portugal,	1	— 88
Norway (1834),	1	— 7	Russia,	1	— 367
Denmark (1834),	1	— 7			

* Until the executive government comes to the aid of private beneficence and exertion, the great mass of children in the concentrated population of the large towns, must be exposed to the baneful effects of the training above referred to, or what is scarcely a greater evil, grow up in total ignorance. From a report by the Manchester Statistical Society, on the state of education in Manchester, Salford, Liverpool, Bury, and York, it appears, that in the aggregate population of these towns, the number of children of the working classes, from three to thirteen years of age, for whom daily instruction should be provided, is 80,050. Of this number 21,957 children attend National and Lancastrian and other schools, in which, while the memory and judgment of the learners are exercised in the acquirement of rudimentary knowledge, attention to a certain extent is given to the training of their habits and affections; but in regard to the remaining 58,093 children, 29,259 receive a worthless instruction in Dame and common Day-schools, and 28,834 are totally uneducated. The effects of the deficiency in the extent and quality of educational instruction, are illustrated in a remarkable manner by the returns lately obtained respecting gaols and houses of correction throughout England and Wales. In the years 1836, 1837, and 1838, the proportion of offenders to their respective intellectual condition was as follows: —

	1836.	1837.	1838.
Wholly uninstructed, or having only the first rudiments of learning,	85.85 ..	87.93 ..	87.81
Able to read and write well,	10.56 ..	9.46 ..	8.77
Instructed beyond reading and writing,	0.91 ..	0.43 ..	0.34
Intellectual condition not known,	2.68 ..	2.18 ..	3.08
	100.	100.	100.

The number of offenders in 1837 was 23,612.

The details of these returns are still more curious and interesting. The Rev. John Clay, chaplain of the House of Correction at Preston, in his report for 1836-37, states, that out of 935 individuals charged with all descriptions of offences, 460 were unable to read, 212 barely capable of reading, 136 could read the Testament, 28 could read fluently, 81 could read well, and write a little, and 18 could read and write well. The degree of religious knowledge exhibited by these prisoners was as follows, — 466 were quite ignorant of the simplest religious truths, 821 were capable of repeating the Lord's Prayer, but it was evident that the greater part could not attach to it any precise meaning, 36 were occasional readers of the Bible, 14 were frequent readers of the Bible, and 12 only had any acquaintance with the principles of religion.

† "Recent measures for the Promotion of Education in England."—*Lond.* 1839.

The amount of *public charity funds in England and Wales applicable to educational purposes* is considerable; but until the investigations of the Commissioners of Inquiry into Public Charities are completed, it cannot be accurately stated. By the latest report of the Commissioners (1835), in which, however, nine opulent English counties are omitted, it appears that a revenue of £197,248 annually is derived from property devoted exclusively to the support of school education.* This revenue it is supposed might, under proper management, be nearly doubled. The subjoined table exhibits the amount of the *government grants in aid of primary education* in each of the following years:—

	1834.	1835.	1836.	1837.	1838.	*Total.*
Through the National School Society, . .	£11,081	£13,002	£17,130	£11,456	£17,041	£69,710
Through the British and Foreign School Society, ...	9,796	7,168	5,281	5,810	6,090	34,145

GOVERNMENT.—This has been usually called a limited monarchy; but, in fact, the sovereignty of Britain is vested in three co-ordinate powers:—an hereditary sovereign; a House of Lords, partly hereditary, partly appointed by the Crown; and a House of Commons, consisting of representatives elected periodically by the inhabitants of the different counties, cities, and burghs. The *King* still possesses ostensibly many of the powers, privileges, and prerogatives of the old English monarchs; but the exercise of these is so completely under the control of Parliament, that, in point of fact, the King cannot interfere in any public measure without the consent of the legislature. The King has only the name of sovereign, while the actual sovereignty is vested in Parliament; so that the government appears to be in reality a republic, at the head of which is a chief magistrate, differing essentially from the Doges of Venice, and the Presidents of America, in little else than in being hereditary. The King has nominally the appointment of the Ministers of State, and the other principal public functionaries —the command of the national forces, and the appointment of their officers — the power of making war or treaties of peace, and various other necessary duties; but all these are done by and with the counsel of responsible Ministers. The control of the public purse is vested in the Commons, and it has long been a recognised principle, that no ministry can continue in office when opposed by a majority of that House. For the purpose of securing such a majority, the acting government, for a long series of years, had recourse to underhand means, or, as it was called, to influencing the Members; but since the reform of the Commons House of Parliament, in 1832, a new order of things has been introduced, and the Commons now virtually appoint the ministry, instead of submitting, as formerly, to their dictation and control.

The King unites the dignity of chief magistrate with that of head of the church; and, in the exercise of his public functions, is assisted by different councils. The first of these is composed of the Peers of the kingdom, who are *by birth counsellors of the Crown*, and whom, as such, the King may assemble for consultation in all affairs of great national importance. This council, however, now exists only in theory; for, in fact, it has not been called together since the reign of King Charles I. Next to the council of peers is the *Privy-Council*, which is composed generally of the Officers of State, the Ministers of the Crown, and such other persons as the King considers it advisable to appoint. The functions of this council are purely judiciary; and the most important part of its duties now consists in hearing and determining appeals from the sentences of the governors and judges of the British colonies and foreign possessions, for which purpose a judicial committee has been constituted by act of Parliament. The Cabinet-Council forms the actual executive Government; the members of which are all privy-councillors, and also members of one or other of the houses of Parliament. The members of the Cabinet are usually the First Lord of the Treasury, the Lord Chancellor, the Chancellor of the Exchequer, the Lord President of the Privy-council, the Lord Privy Seal, the three Secretaries of State, the First Lord of the Admiralty, the President of the Board of Control for Indian affairs, the President of the Board of Trade, the Chancellor of the Duchy of Lancaster, the Secretary of War, and the Master of the Mint, with occasional variations among the latter of these functionaries.

The fourth great Council is the Imperial Parliament of the United Kingdom, which is divided into two chambers: the House of Lords, and the House of Commons. The *House of Lords* is composed of the Lords Spiritual and the Lords Temporal. The spiritual lords are the Archbishops and Bishops of the Church of England; and one Archbishop and three Bishops of the Church of Ireland, who represent by rotation the Irish hierarchy. The temporal lords are the Hereditary Peers of England, of Great

* The income for other charitable purposes, is £491,536.

Britain, and of the United Kingdom of Great Britain and Ireland, with 16 Representatives of the Peers of Scotland, and 27 Peers of Ireland. The Scotch Peers are elected for each parliament; the Irish Peers are elected for life. The established form in which the House is addressed is — "The Lords Spiritual and Temporal in Parliament assembled." The Lord Chancellor of England is by office President of the House; in his absence, or during the abeyance of his office, a temporary Speaker or President is appointed by the Crown. Besides their legislatorial functions, the House of Lords also form a Court of Appeal in the last resort, from the supreme courts of law in the three kingdoms; but in practice, this power is exercised only by the Lord Chancellor, assisted by a judicial committee of their Lordships, who undertake the duty by turns.

The *House of Commons* is composed of 658 members; of whom England and Wales furnish 500, Scotland 53, and Ireland 105. They are elected periodically by such of the people of the United Kingdom as possess certain pecuniary qualifications. The President of the House, who is styled the Speaker, is elected by the members from their own number, and approved by the King. The House of Commons regulate the supplies for the public expenditure of the kingdom; money bills can originate only there, and cannot be altered by the House of Lords. Bills upon any other subject may originate and be altered in either House, but the concurrence of both Houses is necessary; and even when this is obtained, both must concur in every act, and the King has theoretically a veto upon their acts, which become laws only by the concurrence of all the three branches of the legislature. The duration of a parliament, as established by law, is seven years; but the King has the power of dissolving it any time, and he usually does so a year or two before its term expires.

The *judicial establishments of England* are exceedingly complicated, in consequence of the courts having originated in barbarous times, or having been instituted in special exigencies for particular purposes; and never having undergone any systematic arrangement or distribution of powers. There are three distinct codes (if they may be so called) by which the forms and decisions of the supreme courts are regulated: viz. the Common Law of England, which is administered by the Courts of King's Bench, Common Pleas, and Exchequer; the Civil, Canon, and Ecclesiastical laws, which are administered by the Ecclesiastical and Admiralty Judges; and Equity, which forms the basis of the proceedings in the Court of Chancery. The judges of the King's Bench, Common Pleas, and Exchequer, are the judicial assessors of the House of Lords; and make periodical circuits through the counties of England and Wales, where, at the assizes, they administer both civil and criminal justice. The Magistrates of cities and burghs are likewise invested with certain limited judicial powers. By the late Municipal Reform Act, a uniform system of government has been established for all the Parliamentary burghs, except London. The municipal council consists of a mayor, aldermen, and common council, who are elected by the inhabitants. In every county, and in the principal burghs, there are a number of Justices of the Peace, who not only act as magistrates in preserving the peace, and in matters of police, but also exercise certain judicial powers at their quarter-sessions. The most important cases, however, are generally left by them to be tried by the Supreme Judges in circuit. In every county there is likewise a Sheriff, chosen annually by the king, who is at once the judge of the county-courts (now fallen into disuse), the keeper of the king's peace, the ministerial officer of the supreme courts, and the king's bailiff. The Coroner is a functionary chosen by the freeholders of the county; his principal duty is to inquire into the cause of sudden deaths; and in some cases he acts as the sheriff's substitute. There are usually four coroners for each county, and they hold their office for life. The lowest officers of justice are constables and bailiffs. The former are of two kinds: the constables of the hundreds, and the petty constables, who are subordinate to the former. Their functions consist in keeping the public peace in their respective districts, for which purpose they are invested with the power of arresting and imprisoning accused persons, opening the doors of houses, &c. The bailiffs are the sheriff's officers, and perform all the minor and least agreeable duties of his office.

In every county there is likewise a Lord-Lieutenant, who is the commander of the militia, or military levy of the county, and appoints its officers when embodied. He is appointed by the king, and is usually allowed to retain his office for life. The same person, also, generally holds the office of *Custos Rotulorum*, or keeper of the records, and first justice of peace of his own county.

FINANCES. — In early times, the Kings of England, like those of most other feudal states, were the most extensive landholders in the kingdom; their revenues

consisted chiefly of the rents, services, &c., derived from their own lands, and partly of the fines, compositions, and other payments, derived from the lands of their vassals. But in the course of time the estates of the Crown were mostly alienated; and the diminution of revenue thence arising being coincident with increased demands for public service and the greater expense of government and defence, it became necessary to raise a revenue from other sources. At present, the *public revenue* of the kingdom is derived from various sources, which are classed under six principal heads or branches, viz.—1. *Customs*, or duties charged upon most articles of commerce imported or exported; 2. *Excise-duties*, charged on certain commodities produced, or manufactured in the country, and on certain branches of trade; 3. *Stamp-duties*, which are charged upon the parchment or paper on which certain deeds, contracts, receipts for money, bills of exchange, and many other documents, are written or printed; on newspapers, fire-insurances, legacies, probates of wills, &c.; 4. *Land-tax*, assessed on the valued rent of land, and made perpetual in 1798; 5. *Assessed-taxes*, levied upon window lights, servants, horses, dogs, carriages, and numerous other articles; 6. *Post-office duties* upon the conveyance of letters. For the year ending 5th July 1839, the total revenue of Great Britain amounted to £45,049,432, whereof the customs produced £19,606,561; the excise, £12,132,971; stamps, £6,560,275; land and assessed taxes, £3,730,546; the post-office, £1,536,000; crown-lands, and miscellaneous revenues, £279,629, and incidental revenue (repayment of advances, &c.) £1,203,450. These taxes are almost entirely collected by government-officers paid by salaries, each of the branches of customs, excise, stamps, land-taxes, assessed taxes, and post-office, being managed by a separate establishment.

The *public expenditure* consists of a vast variety of items; but more than one-half of its present amount is absorbed by the interest and expense of management of the *national debt*, which, exclusive of £53,052,500 of unfunded debt, amounted at 5th January 1838, to £762,275,188, forming an annual charge of £28,524,739. This debt amounted at the Revolution in 1689, to £664,263; at the accession of Queen Anne, in 1702, to £16,394,702; at the accession of George I., in 1714, to £54,145,363; at the accession of George II., in 1727, to £52,092,238; at the peace of Paris in the third year of the reign of George III., in 1763, to £138,865,430; at the commencement of the American war, in 1775, to £128,583,635; at the conclusion of the American war, in 1784, to £249,851,628; at the commencement of the French war, in 1793, to £239,350,148; and at the date of the consolidation of the English and Irish Exchequers, in 1817, being the second year of the general peace, to £840,850,491. The enormous public expenditure, immediately previous to the termination of the last war, serves in part to explain this amazing growth of the debt. In 1814, the current expenditure, including the interest of the debt, amounted to £106,832,260, which was the largest annual outlay ever made by the British government; that of the previous year was within a million of the same amount. Indeed, the sum expended in the defence of the country since the commencement of the present century is almost incredible in amount; but it affords a signal proof of the immense resources of the nation. The total cost of the army, navy, and ordnance, from 1801 to 1836, was above 1000 millions, or exactly stated, £1,009,938,076; of which £348,557,438 was expended in the five years from 1809 to 1814. The amount paid to foreign states in the shape of subsidies and loans (the latter being for the most part synonymous with the former), from 1793 to 1814, was £46,289,459; of which £30,582,259 was expended during the last ten years of the war.

The estimated expenditure for the year commencing 5th July 1839, is £47,988,000, and it is thus apportioned:—Interest of debt, £29,443,000; charges upon the consolidated fund, £2,400,000; army, £6,563,000; navy, £5,197,000; ordnance, £1,733,000; and miscellaneous charges upon the annual grants of Parliament, £2,652,000. The charges upon the consolidated fund and the annual grants of Parliament, include the expenses of the civil government, the administration of justice, and the collection of the revenue; for the year ended 5th January 1838, the first of these amounted to £2,037,966, the second to £1,326,435, and the last to £3,430,679. The number of persons employed in the various departments of the government (exclusive of the army and navy), was 27,365 in 1815, and 23,578 in 1835; the aggregate amount of their salaries for each of these years respectively, was £3,763,100, and £2,786,278.

ARMY and NAVY.—The Army of Great Britain, in March 1839, consisted of 27 regiments of cavalry; 3 regiments of foot-guards, divided into 7 battalions; 101 battalions numbered as 99 regiments of the line; 1 rifle brigade of 2 battalions;

1 regiment of artillery, divided into 9 battalions; 1 corps of engineers; and 1 corps of sappers and miners; amounting altogether to about 109,000 men. This number was exclusive of the Indian army, and several other colonial regiments and corps; the grand total exceeding 300,000 men. Of the British army, properly so called, from 20,000 to 25,000 men have generally been stationed in Ireland, but at present (July 1839) the number in that part of the kingdom does not exceed 15,000; above 20,000 serve in India; from 10,000 to 12,000, besides artillery and engineers, in Great Britain; and the remainder are dispersed in America, the West Indies, and the British colonies and foreign possessions in different parts of the world.* The British army is recruited entirely by voluntary enlistment, and no difficulty is experienced in finding young men to supply the vacancies made in its ranks, by the ever-varying exigencies of the service. The present constitution of the army dates so far back as the restoration of King Charles II. The first regiment of the line, which till very recently bore the title of "Royal Scots," consisted originally of a body of Scotsmen brought by him from France in 1661. The number of regiments and the complement of men has varied considerably at different periods.† During the latter years of the war which terminated in 1815, the land force embodied, including militia, yeomanry, and volunteers, amounted to not less than 450,000 men. As the militia has not been called out for some years past, the yeomanry cavalry remains the only domestic military force in Britain. After a reduction, in 1838, of nearly one-fourth, the yeomanry consisted of 13,594 privates, embodied into 251 troops, and 46 corps. That portion of the force proper to Scotland, consists of about 10 troops, mustering in all about 700 privates. The annual expense of the yeomanry defrayed by government, is about £80,000.

The *Royal Navy* of Great Britain consists at present of 556 ships of all classes;‡ but deducting such as are used as convict ships, floating chapels, coal depots, &c., the efficient navy consists of 88 sail of the line; 109 frigates; 190 small frigates, corvettes, brigs, and cutters, including packets; 65 steamers of various sizes; 3 troop-ships; and 3 yachts — in all, 455 ships. Of these there were in commission in July 1839, 196 ships, carrying in all 4,202 guns. The number of hands voted for the current year (1839-40), is 34,465, of which number, 23,165 seamen, 2300 boys, and 5500 marines, are to be employed afloat, and 3500 ashore. The principal harbours, dockyards, and arsenals, for the royal navy, are Portsmouth and Plymouth, or rather Devonport, on the coast of the Channel; Sheerness, Woolwich, and Deptford, on the Thames; Chatham on the Medway; and Milford Haven, in Pembrokeshire, South Wales.

The comparative *rank of the higher class of officers in both services* is as follows:— an admiral ranks with a general in the army, a vice-admiral with a lieutenant-general, and a rear-admiral with a major-general. A naval captain of three years standing ranks with a colonel in the army, and a captain of less than three years standing with a lieutenant-colonel; a commander ranks with a major, and a lieutenant with a captain.

* The distribution of the British army in the colonies (exclusive of India), in 1837, was as follows:—New South Wales, 3,980 men; Ceylon, 2,224; Mauritius, 1,668; Cape of Good Hope, 1,668; St. Helena, 556; West Indies, 7,784; North America, 8,896; Mediterranean, 7,228.

† The ordinary cavalry regiments had each, in 1838, an average of 27 officers, 31 non-commissioned officers, 304 privates, and 283 horses. The officers consist of—1 colonel, 1 lieutenant-colonel, 1 major, 6 captains, 6 lieutenants, 6 cornets, 1 paymaster, 1 adjutant, 1 quartermaster, 1 surgeon, 1 assistant-surgeon, and 1 veterinary-surgeon. The complement of a regiment of the line, is considered to be—1 colonel, 1 lieutenant-colonel, 2 majors, 10 captains, 12 lieutenants, 8 ensigns, 1 adjutant, 1 paymaster, 1 quartermaster, 1 surgeon, 1 assistant-surgeon, 36 sergeants, 14 drummers, 36 corporals, and 740 privates. Foot-Regiments in India have, in addition, 1 lieutenant-colonel, 10 lieutenants, 1 assistant-surgeon, and 10 sergeants. The three regiments of horse-guards, consist each of 32 commissioned officers, 58 non-commissioned officers, 351 privates, and 274 horses. The three battalions of the grenadier foot-guards, include in all, 96 officers, 177 non-commisioned officers, and 2,080 privates. The other two regiments of foot-guards, consisting each of two battalions, have each 61 officers, 109 non-commissioned officers, and 1,280 privates.

‡ The official classification of ships in the Royal Navy, is as follows:—

1. Rated Ships, viz.—
   First Rate.—All three-decked ships.
   Second Rate.—One of the royal yachts, and all two-decked ships, whose war complements consist of 700 men and upwards.
   Third Rate.—The other royal yachts, and all such yachts as may bear the flag or pendant of an admiral or captain, superintending one of the royal dock-yards, and all ships whose complements are under 700, and not less than 600 men.
1. Rated Ships—*(continued.)*
   Fourth Rate.—Ships whose complements are under 600, and not less than 400.
   Fifth Rate.—Ships whose complements are under 400, and not less than 250.
   Sixth Rate.—Ships under 250.
2. Sloops and Bomb-vessels; all such as are commanded by commanders.
3. All other smaller vessels, such as are commanded by lieutenants, or inferior officers.

Ships of the 1st rate carry 100 guns and upwards; those of the 2d rate, 80 and upwards; the 3d rate from 70 to 80; the 4th rate from 70 to 50; the 5th rate from 36 to 50; and the 6th rate from 24 to 36.

PRODUCTIVE INDUSTRY. — This important subject we shall notice as fully as our limited space will permit, under the several heads of — 1. Agriculture; 2. Fisheries; 3. Mines; 4. Manufactures; 5. Commerce.

§ 1. *Agriculture.*

The improved state of agriculture in England is remarkably shown, both in the advance of rents, which in many places are at present from three to fivefold their amount in 1793, and in the increased production necessary to meet the wants of a rapidly augmenting manufacturing and trading population, while the number of the producers, or the rural population, is remaining in a comparative degree almost stationary.* Under a preceding head (see table, *anté*, p. 188) we have stated, on the authority of Mr. Couling, the extent of arable and pasture land throughout England and Wales, and also noticed generally the districts best adapted for raising the various cereal and green crops. In another place *(anté*, p. 190) we have briefly pointed out the localities famed for peculiar and valuable breeds of domestic animals. The counties in which tillage or arable husbandry is pursued to the greatest extent, are (according to an enumeration by Mr. M'Culloch), Kent, Essex, Suffolk, Norfolk, Hampshire, Berkshire, Bedfordshire, Surrey, Sussex, Hertfordshire, part of Yorkshire, part of Lincolnshire, Durham, and Northumberland. The principal dairy counties are Cheshire, Salop, Gloucester, Wilts, Buckingham, Essex, Suffolk, York, Derby, Cambridge, Dorset, and Devon. The counties and districts most distinguished for breeding and fattening cattle and sheep, are Lincoln, Somerset, Leicester, Northampton, and, as we have already stated, Teeswater or Teesdale in Durham, and Cleveland and Holderness in Yorkshire. In the Welsh counties, from the broken nature of the surface of the country, the division of agricultural production is not so easily defined. Sheep and cattle are pastured upon the hills, and tillage and dairy husbandry carried on in the valleys.

From the attention given of late years to the statistics of agriculture, a vast fund of valuable information has been accumulated, of which, however, our limits preclude us from making any considerable use. We therefore proceed briefly to notice a few of the most remarkable facts and calculations which have been brought into notice. For more ample details regarding this, and indeed every other subject connected with the productive industry of the kingdom, we refer our readers to Mr. M'Culloch's "Statistical Account of the British Empire," and Mr. Porter's work on the "Progress of the Nation."

The *extent of surface under cultivation* in England and Wales is generally conceived to be about from 11,000,000 to 12,000,000 acres. According to Mr. Comber, the *distribution of the crops* (in 1812), was as follows: —

	Acres.		*Acres.*
Wheat,	3,160,000	Hop-grounds,	36,000
Barley and rye,	861,000	Nursery-gardens,	9,000
Oats and beans,	2,872,000	Fruit and kitchen-gardens, cultivated by spade,	41,000
Clover, rye-grass, &c.	1,149,000	Pleasure-grounds,	16,000
Roots and cabbages, cultivated by plough,	1,150,000		
Fallow,	2,297,000	Total,	11,591,000†

On the supposition that at present there are 12,000,000 acres under cultivation, Mr. M'Culloch makes the following estimate of their distribution: —

	Acres.		*Acres.*
Wheat,	3,800,000	Roots (turnips, potatoes, &c.)	1,200,000
Barley and rye,	900,000	Hop-grounds, and gardens of all sorts,	150,000
Oats and beans,	3,000,000	Fallow,	1,650,000
Clover,	1,300,000	Total,	12,000,000

The *value of the crops*, as above, he estimates at £72,000,000,‡ adding to which £59,000,000‖ as the probable value of the produce of 17,000,000 acres of pasture

* The number of families in England and Wales, employed in agriculture was, in 1811, 770,199; in 1821, 847,957; and in 1831, 834,543, showing an increase of 8.3-10ths per cent. in the course of twenty years. The increase in the number of families, in the entire population, was for the same period 35.9-10ths. — (See also Table, *anté*, p. 192.)

† 16,110 square miles.

‡ This estimate is based on the average productiveness of the various crops throughout England and Wales, which is found to be in regard to wheat from 2½ to 3½ quarters (Winchester measure) per acre; to barley, 4 quarters; to oats 4½; to pease, 2½; to beans, 3½; and to potatoes, 250 bushels per acre. Mr. M'Culloch values the annual produce of hop-grounds, gardens, &c. at £15 per acre.

‖ The items of which this sum consists, are —

Cattle, 1,100,000, at £13 each,	£14,300,000	Horses, 200,000 (full grown), at £15 each,	£3,000,000
Calves, 200,000, at £3 each,	600,000	Poultry, eggs, rabbits, deer, &c.	1,344,000
Sheep and lambs, 6,800,000, at £1 : 10s. each,	10,200,000	Meadow and grass for work and pleasure horses,	13,000,000
Wool, 338,000 packs, at £12 each,	4,056,000	Dairy produce (milk, butter, and cheese),	12,000,000
Hogs and pigs, 556,000, at £1 : 16s.,	1,000,000		£59,500,000

land, the total annual value of the agricultural produce of England and Wales will be £132,500,000. In other estimates it is stated at £126,690,000 and £131,066,000, exclusive of the value of gardens, &c.

Estimates of the number and value of the domestic animals in England and Wales rest in general on very vague data. In the whole of Great Britain there are probably 1,500,000 horses, the value of which will be from £18,000,000 to £22,000,000; cattle, 5,000,000, of which about a fifth are slaughtered annually; and sheep and lambs, 39,500,000, of which about 26,000,000 are in England and Wales.

The landed rental of England and Wales, calculated at the rate of 17s. 3½d. an acre for the former, and 6s. 10d. an acre for the latter, will be nearly £30,000,000 yearly. The total number of proprietors is estimated at 200,000.

§ 2. *Fisheries.*

The fisheries of England and the united kingdom, generally form an important, though not a predominant element of the national resources. Their annual value is estimated by Sir John Barrow at £8,300,000, and by Mr. M'Culloch at £3,000,000, or £3,500,000, either of which sums he considers as beyond the mark.

Of the *British home fisheries* the most important are the *Herring Fishery* and the *Cod and Ling Fishery*. These are chiefly prosecuted on the east coast of Scotland, and in the neighbourhood of the Orkney and Shetland Islands. Large quantities, however, of herrings, cod, haddocks, &c., are caught on various parts of the English coast. At Yarmouth and Lowestoffe the herring fishery is of considerable moment, especially at the former place, in which the capital embarked in it is estimated at £250,000, and the aggregate tonnage of the fishing-vessels belonging to the port at from 4000 to 5000 tons. It is carried on to a less extent at Hastings, Folkstone, Cardigan, and Swansea. The coast in the neighbourhood of Whitby, Hartlepool, and Robin Hood Bay, is the chief seat of the fishery for cod and other white fish. Notwithstanding the withdrawal in 1830 of the bounties, by which government for a course of years endeavoured to foster the herring fishery,* it does not appear to have declined. In 1836 the quantity cured was 497,615 barrels, which exceeded by 55,420 barrels the largest take (442,195 barrels, in 1821) on which the bounty was ever paid; and in 1837 (the date of the latest returns), the take was 397,737 barrels, or about the average take of the preceding ten years. In 1834, exclusive of 303 vessels of the burden of 10,385 tons which entered British ports with 56,615 barrels of herrings cured at sea, the herring and cod and ling fishery of that year employed 11,284 boats decked or undecked, and gave employment to 82,266 persons. The number of persons employed in the same fisheries in 1837 was 86,533. We have already given some statements illustrative of the *Oyster Fishery* (see *anté*, p. 190), and now add, that the principal towns engaged in the fishery, or rather the trade of oyster fattening for London consumpt, are Colchester in Essex, and Faversham, Milton, Queenborough, and Rochester in Kent. A considerable fishery in oysters is carried on at Wells in Norfolk, and another, to which we have already alluded, at Poole in Dorsetshire. The latter, some years ago, supplied the London market two months every season, and the receipts for that time were supposed to average from £8000 to £10,000. The Jersey oyster fishery, which is principally for the supply of the London market, employs about 1500 men, 1000 women and children, and 250 boats. The *Salmon Fishery*, which till lately was of very great value, is now in a declining state, not only as respects the Tweed, which is its principal seat in England, but also the other rivers thoughout the kingdom. The exports from Berwick, which formerly were from 9,000 to 10,000 boxes a-year, have fallen to about from 3000 to 4000 boxes; and the annual rental paid to the proprietors of the river, which twenty-three years ago exceeded £30,000, is now reduced to about £5,000. This decline is ascribed to overfishing and a too limited close-season, by which the number of fish has been lessened. The *Pilchard Fishery* is carried on exclusively on the coasts of Devonshire and Cornwall. During the season, which extends over a great part of the year, it engages about 1,000 boats, and gives employment to 3,500 men at sea, and 5000 men and women ashore. Of the annual produce, about 3000 hogsheads are retained for home consumption, and 30,000 hogsheads exported to the Mediterranean. The capital employed in boats, nets, &c. is supposed to be from £200,000 to £250,000. The less considerable fisheries, though important in the aggregate, are those of *mackerel*, which is taken chiefly on the coasts of Norfolk and

* At the maximum period of these duties, exclusive of a bounty on the tonnage of the vessels fitted out for this fishery, varying according to circumstances from 20s. to 50s. a ton, a bounty of 4s. a barrel was given on all herrings cured gutted.

Hampshire and the intervening counties; of *turbot*, which, though scarce, is found on some of the coasts; and of *lobsters*, which are caught chiefly on the coast of Yorkshire. The greater portion of the lobsters required for the London market is procured from Shetland and Norway; and the same market derives its principal supply of turbot from Holland. It is said that great quantities of the smaller kinds of shell-fish are consumed by the lower orders in London, under the name of *periwinkles*; these are gathered on various parts of the coast, even at as great a distance as the Firth of Forth. A fishery for *sprats* to be used as manure, usually termed the *Stow-boat Fishery*, is carried on extensively on the coasts of Norfolk, Essex, and Kent.

Of the *distant British fisheries* we shall briefly mention the Cod Fishery of Newfoundland, the Northern Whale Fishery, and the Southern Whale Fishery, all of which, especially the two first, are considered to be in a state far from thriving. In respect to the *Newfoundland Cod Fishery*, the fishings on the great and other banks have been abandoned to the French and the Americans, and the only fishery carried on by the British is the boat or coast fishery. In 1814 the value of the British fishery in that quarter exceeded £2,800,000,—in 1834, the value of the fish exported was only £443,577. A valuable British fishery, the produce of which is estimated at about £300,000, exists on the Labrador coast, and there is another of a profitable description carried on along the eastern coasts of the British provinces to the south of that country. *The Northern Whale Fishery*, or as it was formerly called, the *Greenland Whale Fishery*, has of late years very much declined, in consequence of the decreased number of whales met with, and their retreat from their old haunts on the coast of Greenland to less accessible seas, where their capture is attended with greater risk than formerly. The average number of vessels lost during each of the twenty years ended 1834 was 5, and in one of these years (1830) the loss amounted to 19. In 1834, the number of vessels sent to Greenland and Davis' Straits was 76, having an average tonnage of 328 tons. The returns that year were 8,214 tons of oil, and 591 of bone. The annual produce of the fishery appears, at an average of the last few years, to be only about £300,000, which may be considered a very inadequate return, considering the great amount of capital embarked in it, and the risk attending its operations. As in the case of the herring fishery, the whale fishery was at one time largely supported with government funds, the bounties expended upon it having in all amounted to about two millions and a half. These bounties ceased in 1824. The principal ports in England engaged in this fishery are Hull, Newcastle, London, Whitby, and Berwick. The *Southern Whale Fishery*, the principal object of which is the capture of the spermaceti whale, is carried on almost exclusively by vessels from the port of London. In 1834, 126 ships, having an average tonnage of 390 tons, were engaged in it. The return that year was 6,731 tons of sperm, and 2,543 tons of common oil. This fishery has for many years been keenly and skilfully prosecuted by the Americans, and latterly by the British Australian colonists. The supply of fish appears to be decreasing.

§ 3. *Mines.*

Having already described, as fully as our limits would allow, the geographical distribution of the mineral productions of England (see *anté*, pp. 186, 187), we shall now add some brief notices regarding the extent to which these are made available. The benefit which Britain derives from its mineral treasures is immense, not so much as regards their direct marketable value (though that is considerable), but as the means by which the manufacturing power of the country is so prodigiously developed.

The following estimate of the mineral productions of Great Britain, on an average of years and prices, has been framed by Mr. English, editor of the Mining Journal:—

	Quantity.	*Value.*
Coal,	25,000,000 tons	£10,000,000
Iron,	900,000 ,,	7,000,000
Copper,	13,000 ,,	1,300,000
Lead,	46,000 ,,	950,000
Tin,	5,000 ,,	550,000
Silver (extracted from lead)	10,000 lbs. Troy	30,000
Salt, alum, and other minor produce, more than		1,000,000
Total yearly value probably exceeds		£20,830,000

Though the valuable information contained in the above table is quite sufficient for ordinary reference, we think it proper to furnish our readers with some details regarding the important products coal and iron.

COAL.—The quantity of coal annually consumed in Great Britain is estimated by Mr. M'Culloch as follows:—domestic consumption, and in the smaller manufactures, 17,000,000 tons; in the production of iron (but not including the manufacture of hardware and cutlery), 4,000,000; in the cotton manufacture, 800,000; in the woollen, linen, and silk manufacture, 600,000; in copper-smelting, brass manufactures, &c. 925,000; in salt-works, 350,000, and in lime-works, 500,000,—in all 24,175,000 tons. Adding to this quantity 900,000 tons for exports to Ireland, and 1,113,000 to the colonies and to foreign parts, the total will represent an annual production of 26,188,000 tons, the value of which, in all, at 8s. a ton, is £10,400,000 a-year. Of the prodigious quantity just now stated, by far the greater part is produced in England. About a sixth of the whole supply is derived from the Durham and Northumberland field alone. The Tyne and Wear colleries give employment to 21,000 miners and others engaged in raising the coal, and to 15,000 seamen. In all there may be 135,000 persons engaged in the British coal trade. The supply of coal may be deemed inexhaustible. According to an estimate by Mr. Taylor (which, however, is considered by Dr. Buckland to be very much exaggerated), the Durham and Northumberland field will afford the present supply for above 1,700 years; and Mr. Bakewell is of opinion that the Welsh coal-field will supply England with fuel for 2,000 years after all the English coal-mines are worked out.

IRON.—We have already stated the proportions in which iron has hitherto been produced in the various iron-making districts (see *antè*, p. 187.) The quantity made in all the United Kingdom in 1830, was 678,417 tons, of which 635,590 tons were the produce of furnaces in England and Wales. Since that period, the quantity of iron used in the construction of railways has been very great, and as these undertakings continue on the increase, it is probable that the quantity at present made in Britain is not less than 1,000,000 tons, and that in the course of a year or two a much larger quantity will be made.* On the supposition that the annual production is 800,000 tons, Mr. M'Culloch estimates the value, at £6,300,000 yearly; the number of persons employed, or dependent on the business, at 220,000; and the capital embarked, at £7,000,000.

§ 4. *Manufactures.*

INDUSTRY.—Nearly every species of art and manufacture has been carried to a high degree of perfection in England. The English may indeed be regarded as the most enterprising and industrious nation in the world. Almost every town or district is distinguished for some branch of industry; but our limited space will allow us to notice only the most considerable of such as may properly be called manufacturing places, inasmuch as the quantity of the articles which they produce exceeds the wants of their own inhabitants.

Iron and Iron-founding:—Merthyr-Tydvil in Glamorganshire, and several adjacent places (principally Llanelly, Penydaren and Vainor) in Brecknockshire; Trevethin, Pont-y-pool, Upper Llanover and Aberystwith in Monmouthshire; Wednesbury, Bilston, West Bromwich, and neighbouring places in Staffordshire; Hales Owen, Madely, Dawley, Ketley (near Wellington), and Shrewsbury in Salop; Dudley, Stourbridge, and Old Swinford in Worcestershire; Bedlington and Bishop-Auckland in Durham; Sugley (near Newcastle) and Long-Benton in Northumberland; Rotherham in the West Riding of Yorkshire; Whitchurch and Michaelstone-upon-Afon (near Neath) in Glamorganshire.—*Preparation of Tin and Copper*:—Swansea in Glamorganshire; Panteague, Llanvrechva, and Rogerston in Monmouthshire; Margam in Glamorganshire.—*Engines and Machinery*:—Soho (a suburb of Birmingham, but in Staffordshire;) Bertley and Sunderland in Durham; Newcastle and Chirton in Northumberland; Greenwich in Kent; Dyffryn-Clydach in Glamorganshire; Llanidloes in Montgomeryshire; Manchester and Salford, Lancashire.—*Hardware, Cutlery, and Tools*:—Sheffield, and neighbouring parishes, in the West Riding of Yorkshire; Birmingham and Aston, Warwickshire; Tipton, Bilston, Wolverhampton, and Walsall, in Staffordshire; Choriton-Row (near Manchester), Warrington, and Prescot in Lancashire; Willenhall, Wednesbury, Darlaston, Sedgeley, Rowley-Regis, Smithwick, Handsworth, and Brewood, in Staffordshire; Ashton in Lancashire; Wolverley, Cradley, Belbroughton, Bewdley, King's-Norton, and Yardley, in Worcestershire; Mells, Somersetshire.—*Plated Goods*:—Sheffield, Birmingham, and London.—*Jewellery and Plate*:—London, Birmingham, Derby, Liverpool, and Chester.—*Watches and other Timepieces*:—Clerkenwell (London), Coventry, Liverpool, and Chester.—*Nails*:—In most of the towns and villages in Staffordshire and Worcestershire, particularly at Bromesgrove, Dudley, Old Swinford, Cradley, and Nathfield, in the latter county; also at Darton, in Yorkshire, West Riding.—*Needles*:—Reddeck (parish of Tardebigg), and Feckenham, in Worcestershire; Whitechapel (London); Ipsley, Studley, Alcester, and Sambourn, in Warwickshire, and Hathersage in Derbyshire.—*Pins*:—Birmingham; Gloucester, and Bristol, in Gloucestershire; Warrington in Lancashire, and some other places.—*Cottom Fabrics*:—Manchester, Blackburn and its vicinity, Great and Little Bolton, Oldham and Crampton, Salford, Preston, Wigan, Bury, Choriton-Row, Spotland and Castleton (in Rochdale parish) and the parish of Leigh, in Lancashire; Saddleworth in the West Riding of Yorkshire, and the wapentakes of Staincliffe and Ewecross in the same Riding; Macclesfield in Cheshire; Kendal in Westmoreland; also to a small extent at Burton-upon-Trent, Yoxhall and Tutbury in Staffordshire; and at Holywell and Mold in Flintshire.—*Woollen Cloth*:—Halifax (parish), Leeds, Bradford, Huddersfield, Almondbury (parish), Kirk-Burton, Calverley, Dewsbury (parish), Birstal, Batley, Saddleworth, and Kirkheaton, in the West Riding of Yorkshire; Trowbridge in Wilts; Frome in Somersetshire; Bradford in Wiltshire; Wooton-under-Edge, Stroud, Minchinhampton, Bisley, Uley, Norsley, Cam, Painswick, and other places in Gloucestershire; Lynecombe, Widcome, Tiverton (near Bath), and Wellington in Somersetshire; Westbury (parish), Melksham, Kingswood, North Bradley, Southwick, Hilperton, Chippenham, Bromham, Longbridge, Heytesbury, and Calne in Wiltshire.—*Stuffs, and other Woollen Manufactures*:—Stuffs (bombazines, &c.) principally at Norwich in Norfolk, and Huddersfield in the West Riding of Yorkshire; at Wymondam in Norfolk; Durham and Bernard-Castle in the county of Durham; and some of the clothing towns already enumerated:—various woollen manufactures, though to no great extent, at Barnsley in Yorkshire, West Riding; Kendal, Kirkland, Melthorpe, Stainton, Nether-Grave-Ship, and Hilton in Westmoreland; Axminster, Ashburton, Buckfastleigh, Chagford, Collumpton, Crediton, North and South Molton, and North Tawton, in Devonshire; Newtown, Llanllewhaiarn, Llanbrynmair and Pool (Welshpool), in Montgomeryshire; Dolgelly in Merionethshire; and in several of the Welsh counties, particularly Carmarthen, Cardigan, Denbigh, Glamorgan, and Pembroke.—*Carpets*:—Kidderminster in Worcestershire; and to a small extent at Bridgenorth in Salop; Wilton in Wiltshire; Spratton in Northamptonshire; Dewsbury in York, West Riding; Startforth in York, North Riding; Durham

* We have seen a statement, that at the commencement of the present year (1839) there were in South Wales 122 furnaces in blast, 7 out, 31 building, and 91 *contemplated*; and, in Scotland, 50 furnaces in blast, 5 out, 7 building, and 26 *contemplated*.

and Bernard-Castle in Durham county; and in various places in Lancashire. —*Flannels*:—Rochdale in Lancashire; Newtown in Montgomeryshire; Oswestry, Church-Stretton, and Worthen in Salop. —*Blankets*:—Witney, together with Harley and Crawley (adjacent hamlets) in Oxfordshire; Wakefield and Heckmond-Wike (near Wakefield) in the West Riding of Yorkshire. —*Hosiery*:—Leicester, Nottingham, and Derby; also Loughborough, Hinckley, and Sheepshead in Leicestershire; Tewkesbury in Gloucestershire, and to a small extent at Godalming in Surrey. —*Lace*:—Nottingham, Radford, Mansfield, Sutton-in-Ashfield, and Basford in Nottinghamshire; at Derby; at Leicester and Melton-Mowbray in Leicestershire; Snenton, Hucknall-Torkard, Beeston, Linton, Charlton, Bulwell, Greasley, Calverton, Kirby-in-Ashfield, Mansfield-Woodhouse, Stapleford, Southwell, Lambley, Ruddington, and Selston, in Nottinghamshire; Middleton-Cheney in Northamptonshire; and to a small extent at Barnstaple, Pilton, and Tiverton, in Devonshire, and Tewkesbury in Gloucestershire. —*Linen*:—Barnsley (and other places in the wapentake of Staincross), Leeds, Staincliffe and Ewcross (wapentakes), Knaresborough (and other places in the wapentake of Claro), and Ripon in the West Riding of Yorkshire; York City; Stockton-upon-Tees, Hurworth, and Aycliffe in Durham; Kendal, Holme, Kirkby-Lonsdale, and Kirkby-Thore, in Westmoreland; Newark and Hawton in Nottinghamshire; Hutton, Appleton-upon-Wiske, Osmotherley, Northallerton, Barrowby, Sowerby, Burton-upon-Yare, and Broughton, in the North Riding of Yorkshire; Keynsham in Somersetshire: — and in *Sacking, Sailcloth, &c.* — Crewkerne in Somersetshire; Bridport in Dorsetshire; Maidstone in Kent; Liverpool, Warrington, and Treckleton (in Garstang parish), Lancashire; Hull in the East Riding of Yorkshire; Whitby in the North Riding of the same, and several other of the principal sea-ports of the kingdom. —*Silk*: — Spittalfields (London); Coventry in Warwickshire; Huddersfield in the West Riding of York; Macclesfield in Cheshire; Manchester and Salford in Lancashire; Derby; Nuneaton, Foleshill, Astley, Chilvers-Coton, and Sow, in Warwickshire; Braintree, Great and Little Coggleshall, and Bocking, in Essex; Chard, Taunton, and Shepton-Mallet in Somersetshire; Haslemere in Surrey; Glimsford and Lavenham in Suffolk; Holywell in Flintshire; Kettering in Northamptonshire; Great Yarmouth, in Norfolk. —*China-ware and Earthenware*:—Burslem, Etruria (and other parts of the township of Shelton), Stoke-upon-Trent, Longton, Lane-End, Penkhull (township), Hanley, Fenton-Calvert, and Snead in Staffordshire; Colebrook-Dale* in Salop; Derby; Lambeth (London;) Madeley and Broseley in Salop; also Bristol, Newcastle, Chesterfield, &c. —*Glass*:—Newcastle and Byker in Northumberland; Gateshead, South-Shields, and Bishop-Wearmouth, in Durham; Birmingham; Ravenhead (near St. Helen's) in Lancashire; Bristol; Dudley; Stourbridge; Leeds; Manchester; London; Nailsea in Somerset; Witchwood in Yorkshire, West Riding, &c. —*Hats*:—Southwark (London); Frampton-Cotterell, Winterbourne, Bitton, and other places in Gloucestershire; several places in Derbyshire; Oldham in Lancashire; Atherstone in Warwickshire; Rudgeley in Staffordshire; also Bristol, Manchester, Liverpool, Birmingham, and Newcastle-under-Lyne. —*Shoes*:—Northampton, Wellingbro', Irthlingborough, and Kettering in Northamptonshire; London; Stafford, &c. —*Gloves (Leather)*:—Worcester; Woodstock, and other places (Wootton, Charlbury, &c.) in Oxfordshire; Yeovil and Milborne-Port in Somersetshire; London; Ludlow in Salop, &c. —*Paper*: — Maidstone in Kent; Wycombe, Norton-Chenies, &c. in Buckinghamshire; Chedder in Somersetshire; Holywell in Flintshire, &c. —Of the remaining manufactures, we may mention, *sugar-refining*, which is carried on at Whitechapel in London: *porter-brewing* in the metropolitan borough of Southwark; *tanning* and *leather-dressing* at Bermondsey (Southwark), Newcastle, Bristol, &c.; *soap-making* at Liverpool, London, Bristol, Runcorn, Newcastle, Brentford, Dudley, Hull, &c.; preparation of *colours* (from lead), at Monyddmaen in Monmouthshire, and at Newcastle; *gunpowder-making* at Dartford in Kent, Waltham Abbey in Essex, Sedgewick and Longdales in Westmoreland, &c.; preparation of *alkali* at Newnham in Northumberland; *comb-making* at York, Sheffield, and Birmingham, also at Kenilworth in Warwickshire, and Greenwich in Kent; and the manufacture of *gun-flints* at Brandon in Suffolk.

The woollen manufacture is the oldest for which England is celebrated; its total yearly produce is estimated at about £22,500,000, and the number of persons employed at 334,000. The cotton manufacture is, however, the largest and most important, the total annual produce being estimated at from £31,000,000 to £34,000,000, and the number of people supported by it at 1,500,000. The capital which it employs is about £31,000,000. The rapidity of its growth, especially within the last twenty years, is unparalleled. While the quantity of cotton imported for use into the United Kingdom was only 17,999,882 lbs. in 1785; 31,447,605 lbs. in 1790; 56,010,732 lbs. in 1800; and 88,743,200 lbs. in 1816; by 1838 it had increased to 417,483,600 lbs.† The total value of the iron manufactures (hardware, cutlery, &c. included) of Great Britain, is estimated at £17,000,000 a-year. Linen has never formed one of the staple manufactures of England, and the manufacture of silk has never been a very prosperous branch of trade; but still these two manufactures give employment to a considerable number of people; the value of the annual produce of the former is estimated at £8,000,000, and that of the latter at £10,000,000. China and earthenware are manufactured in great perfection, and to a vast extent, principally, as we have already stated, in Staffordshire, where "the Potteries," as a group of towns and villages engaged in the manufacture is called, occupy a district of considerable extent in the north-west of the county, with a population of 60,000 souls. It is reckoned that earthen-ware, valued at £2,350,000, and glass at £2,000,000, are made yearly in Britain. The stocking manufacture is carried on to a great extent in the places we have already enumerated in this page. Cotton hosiery, valued at

* The pottery manufacture carried on at Colebrook-Dale, Worcester, and Derby, is confined chiefly, if not altogether, to fine china, or porcelain.

† In considering the growth of the cotton manufacture, it is of importance to notice the dates of the adoption of the mechanical inventions by which its progress has been so rapidly accelerated. About 1790, Sir Richard Arkwright's inventions were thrown open to the public by the setting aside of his patent in the court of King's Bench. Five years earlier, the first application of Mr. Watt's steam-engine to a cotton-mill had been effected at Papplewick in Nottinghamshire; and in 1801, Dr. Cartwright's power-loom, invented in 1787, was first brought into practical use through the exertions and enterprise of Mr. Monteith of Pollockshaws, near Glasgow.

£880,000, and worsted hosiery at £870,000, are annually produced, and the manufacture gives employment to about 73,000 persons. Lace also is made in large quantities in the mid-land counties, and commands a ready sale in all foreign markets. The produce of this manufacture (or the "bobbin-net trade," as it is sometimes called), is valued at £1,797,850 yearly, and it furnishes employment to from about 150,000 to 200,000 persons. The capital embarked in the lace and hosiery manufactures may, taking them together, be about £2,800,000. The value of the annual produce of the various branches of the leather manufacture is estimated at £13,000,000, and that of the hat trade, including the manufacture of felt caps for soldiers, at £2,420,000. The quantity of soap and candles made in Britain is most enormous. According to Excise returns, 140,319,323 lbs. of hard, and 11,794,834 lbs. of soft soap, were made in 1837; and in 1829, duty was paid on 116,206,541 lbs. of candles. The annual value of these two articles will be little less than £7,000,000. The remaining branches of manufacture are too numerous to be specified, and are relatively unimportant, though several would be considered of great importance in any other country. Take, for instance, the watch manufacture, which is valued at £1,500,000 a-year, and that of paper, the value of the yearly produce of which (exclusive of the duty on the manufactured article) may be £1,300,000. Printing and bookselling form a very extensive and rapidly increasing branch of trade, particularly in London.

The distribution and extent of the manufacture of woven fabricks throughout the kingdom generally, will be seen from the following table,* which exhibits the number of factories in operation in 1835, distinguishing the branches of manufacture therein carried on, and the number of persons employed in each: —

	Cotton Factories.		*Woollen Factories.*		*Silk Factories.*		*Flax Factories.*	
COUNTIES.	N°.	Persons employed.	N°.	Persons employed.	N°.	Persons employed.	N°.	Persons employed.
Berks,	....	.....	....	.....	3	225	..	.....
Buckingham,	....	.....	....	.....	2	157	..	.....
Chester,	109	31,512	15	265	88	10,706	..	.....
Cornwall,	....	.....	9	201	..	.....	..	.....
Cumberland,	13	1,658	15	271	..	.....	7	239
Derby,	92	10,850	5	171	15	2,725	2	84
Devon,	....	.....	36	1,415	4	496	4	142
Dorset,	....	.....	4	107	5	282	21	710
Durham,	1	33	5	322	..	.....	6	601
Essex,	....	.....	....	.....	8	1,527	..	.....
Gloucester,	....	.....	118	7,973	2	84	..	.....
Hants,	....	.....	2	22	2	298	2	91
Hereford,	....	.....	2	19	..	.....	..	.....
Hertford,	....	.....	....	.....	7	1,118	..	.....
Kent,	....	.....	1	17	1	42	1	62
Lancaster,	683	122,415	106	5,066	23	5,038	18	3,024
Leicester,	6	592	21	1,205	..	.....	..	.....
Lincoln,	....	.....	1	29	..	.....	..	.....
Middlesex,	7	350	2	30	..	.....	..	.....
Monmouth,	....	.....	3	20	..	.....	..	.....
Norfolk,	....	.....	5	198	4	1,289	..	.....
Northampton,	....	.....	2	70	1	no return.	..	.....
Northumberland,	....	.....	3	40	..	.....	2	242
Nottingham,	20	1,723	....	.....	3	336	1	9
Oxford,	....	.....	9	313	1	42	1	16
Salop,	....	.....	3	100	..	.....	1	686
Somerset,	....	.....	36	1,891	23	1,890	13	367
Stafford,	13	2,048	3	143	11	1,463	..	.....
Suffolk,	....	.....	....	.....	1	110	..	.....
Surrey,	....	.....	6	67	2	125	..	.....
Warwick,	....	.....	5	196	5	131	..	.....
Westmoreland,	....	.....	14	428	..	.....	4	294
Wilts,	....	.....	63	3,250	4	457	1	24
Worcester,	....	.....	6	734	8	288	..	.....
York (N. R.),	....	.....	....	.....	..	.....	4	164
York (W. R.),	126	10,911	601	40,890	8	1,118	64	9,438
York (E. R.),	....	.....	1	8	..	.....	..	.....
Total—ENGLAND,	1,070	182,092	1,102	65,461	231	29,947	152	16,193
WALES,	5	1,151	85	785	..	.....	..	.....
SCOTLAND,	159	32,580	90	3,505	6	686	170	13,409
IRELAND,	28	4,311	36	1,523	1	49	25	3,681
UNITED KINGDOM,	1,262	220,134	1,313	71,274	238	30,682	347	33,283

* Abridged from tables in the Report from the Inspectors of Factories.

The following is a summary of the number of power-looms used in these factories at the date already stated:—

	Cotton.	*Woollen.*	*Silk.*	*Flax.*	*Mixed Goods.**	TOTAL.
ENGLAND,	90,679	5,105	1,714	41	25	97,564
SCOTLAND,	17,531	22	....	168	....	17,721
IRELAND,	1,416	....	....	100	....	1,516
UNITED KINGDOM,	109,626	5,127	1,714	309	25	116,801

In respect to the persons employed in each branch of industry in the factories, the proportions as to age are as follows:—

Ages.	*Cotton.*	*Woollen.*	*Flax.*	*Silk.*
8 to 12	3.7	6.7	3.7	20.9
12 — 13	9.3	12.	12.2	8.7
13 — 18	29.8	29.8	36.1	30.8
Above 18	57.2	51.5	48.	39.6
	100.	100.	100.	100.

The proportions as to sex are:—

	Cotton.	*Woollen.*	*Flax.*	*Silk.*
Males, . . .	45.7	52.5	31.2	33.2
Females, . . .	54.3	47.5	68.8	66.8
	100.	100.	100.	100.

According to Mr. Baines, the number of hand-loom weavers engaged in the cotton manufacture is about 250,000. Mr. M'Culloch estimates the number of persons employed in the silk manufacture at upwards of 207,000; and the total number employed in the linen manufacture of Great Britain and Ireland at 185,000.

From the great extent to which the trades of brewing and distilling are carried on in this country, they are of too great importance to be here overlooked. The quantity of malt used for making beer in the United Kingdom during the year 1834 was 32,139,650 bushels; of this quantity 28,944,723 bushels were used in England, 1,339,601 in Scotland, and 2,055,326 in Ireland.

The following table exhibits the quantity of spirits distilled in the three kingdoms in 1838:—

	ENGLAND. *Gallons.*	SCOTLAND. *Gallons.*	IRELAND. *Gallons.*	Total. *Gallons.*
From malt only, . .	. . . .	6,593,467	147,716	6,741,183
— malt and raw grain, .	5,776,255	2,453,732	10,917,104	19,147,091
— mangel wurzel, .	156	....	....	156
Total,	5,776,411	9,047,199	11,064,820	25,888,430

Of the above quantities, Scotland sent 1,828,732 gallons to England, of which 440 was made from malt; and 868,744 gallons to Ireland, of which 3,130 was from malt.

The home consumption during the same year was—

	Malt Spirits. *Gallons.*	Grain Spirits. *Gallons.*	Total. *Gallons.*
In England, . . .	443,130	7,847,360	8,290,490
— Scotland, ...	5,764,148	585,563	6,349,711
— Ireland, ...	536,996	11,759,387	12,296,382
	6,744,273	20,192,310	26,936,583

The number of quarters of malt made in England in 1837 was 4,211,544; in Scotland 572,880; in Ireland 284,418; being in all the United Kingdom 5,068,842 quarters, or 40,550,736 bushels. This we ought to have noticed under the head of "Agriculture."

§ 5. *Commerce.*

The wealth and enterprise of the most distinguished commercial nations of ancient or modern times, of which history has transmitted to us the records, sink into insignificance when compared with the commercial greatness of Britain. The inland commerce is perhaps the richest, the most extensive, and the most active that exists in any country; while the foreign trade extends to every accessible region of the world. Every article manufactured in the country, which will command a sale in a foreign market, is exported, and its value returned to the country either in money or in goods.

* The materials used are worsted, cotton, silk, and India-rubber thread; the articles manufactured are girths, belts, braces, garters, and the like.

The imports from different countries, together with an enumeration of the exported to each, have been arranged, for distinctness, in the following Ta details in which are taken (in an abridged form) from Mr. M'Culloch's sta respecting the foreign trade of Great Britain.

Countries.	*Articles* IMPORTED INTO *Great Britain.*	*Articles* EXPORTED FRO *Great Britain.*
IRELAND, . . .	Linen, grain, flour, meal, live cattle and pigs, barrelled beef and pork, butter, lard, &c. — in all of the value of £8,000,000 or £9,000,000 annually.	Cottons, woollens, hardware, British manufactures; te wine, &c.
RUSSIA, . . .	Tallow, corn, flax, hemp, flax-seed, linseed, timber, bristles, ashes, hides, iron, and tar.	Cotton-twist, woollens, salt, c ware, lead and shot, tin, m &c.
SWEDEN & NORWAY, . .	Timber, iron, bark, smaltz,* &c.	Cottons, cotton-twist, woollens ware, hardware, coffee, indig co, sugar, spices, &c.
DENMARK, . .	Corn, and rape-seed, — and in small quantities, butter, bristles, wool, hides, and bark.	Coal, salt, iron, steel, earthenw chinery, coffee, indigo, &c.
PRUSSIA, . . .	Wheat, timber, — and in small quantities, bark, bristles, wool, spelter (zinc), flax, &c.	Refined sugar and salt, — and i through Hamburgh, cotto ware, earthenware, &c.
GERMANY, . .	Wool, corn, wine, butter, linens, hides, clover-seed, rape-seed, smaltz, spelter, smaltz and zaffre,* furs, wooden clocks, &c.	Cottons, cotton-twist, woollen sugar, hardware, earthenwa steel, coal, salt, indigo, rum tobacco, cotton-wool, and sy
HOLLAND & BELGIUM,	Butter, cheese, corn, madder, geneva, flax, tow, hides, linen, seeds, toys, &c.	Cottons, cotton-twist, woolle ware, earthenware, salt, co cocoa, indigo, and tobacco.
FRANCE, . .	Brandy, wine, silk (raw and manufactured), gloves, madder, eggs, skins, fruit, and some descriptions of hardware, jewellery, watches, toys, &c.	Wool, linens, linen-yarn, brass per manufactures, machine horses, &c.
SPAIN & PORTUGAL, .	Wines (port and sherry), barilla, raisins and other dried fruits, lemons, oranges, olive-oil, quicksilver, and sometimes corn.	Cotton-stuffs, woollens, linen ware, cutlery, iron, steel, soap leather, &c.; also cinnamon, Spain is our largest custome
ITALY, . . .	Thrown-silk, olive-oil, straw-plait, straw-hats, straw to be made into plait, wheat (chiefly at second-hand, from the Black Sea), currants, lemons, oranges, wine, barilla, shumac, bark, cheese, lamb-skins, hemp, &c.	Cotton-stuffs, cotton-twist, re gar, woollens, hardware, cutl steel, coffee, indigo, tobacco, &c.
TURKEY, GREECE, &c. . .	Silk, opium, madder, figs, raisins, valonia,† oil, cotton-wool, currants, senna, &c.	Cottons, cotton-twist, — a con quantity of indigo and coff small supply of linens, hardw steel, cordage, woollens, cart &c.
EGYPT, . .	Cotton-wool, flax, linseed, and senna and other drugs.	Cotton-stuffs, iron, steel, arms nition, machinery, &c.
WESTERN AFRICA (Sierra Leone)	Palm-oil, ivory, teak-timber, wax, hides, dye-woods, &c.	Cottons, guns and pistols, h salt, soap, candles, &c.
CAPE OF GOOD HOPE, . .	Wine (of an inferior quality, with the exception of Constantia), hides, ivory, skins, aloes, &c.	Cotton, woollen and linen stuf rel, earthenware, hardware, ir soap, candles, stationery, &c
MAURITIUS, . .	Sugar.	Cottons, linens, iron, steel, ma apparel, &c.
ASIA & AUSTRALIA, . .	From *China*,—Tea; from *Hindostan*,—Indigo, cotton-wool, sugar, silk, coffee, pepper, saltpetre, piece-goods, rice, lac-dye, &c.; from *Ceylon*,—Cinnamon, cocoa-nut oil, ivory, &c.; from the other *Indian Islands*,—Tin, pepper, mace and cloves; from *Australia*,—Wool, sperm and other oils, and sometimes bark.	Cotton-stuffs and twist (these quantities to Hindostan), linens, earthenware, coppe ware, iron, steel, leather, gl chinery, &c.
BRITISH NORTH AMERICA,	Timber, fish, furs, wheat, ashes, skins, turpentine, &c.	Woollens, cottons, linen, hardw steel, soap, candles, earthenw parel, glass, cordage, coal, cheese, &c.
BRITISH WEST INDIES,	Sugar, coffee, rum, cotton, pimento, molasses, mahogany, logwood, fustic, cocoa, cochineal, ginger, hides, &c.	Cottons, linens, woollens, appa candles, hardware, iron, st earthenware, cordage, beef, p and ammunition, &c.
UNITED STATES, .	Cotton-wool, tobacco, flour, wheat, rice, skins, furs, hides, staves, &c.	Cottons, linens, woollens, h cutlery, earthenware, salt, ha per, apparel, books, &c.
SOUTH AMERICAN STATES,	Cotton-wool, sugar, coffee, bullion, precious stones, cocoa, hides, fruits, bark, dye-woods, and furs.	Cottons, linens, woollens, earth hardware, soap, candles, &c.
FOREIGN WEST INDIES,	Sugar, coffee, cotton-wool, cigars, &c.	Cottons, earthenware, linens, h iron, steel, woollens, glass, ma &c.

* *Smaltz* and *zaffre* are preparations from cobalt, extensively used in colouring earthenw glass, to both of which they communicate a blue tint.

† A species of acorn, used in the process of tanning.

To show the *value and direction* of the Colonial and Foreign trade of Britain, we subjoin the four following tables:—

I. TABLE exhibiting the Total Amount (according to the official Rates of Valuation) of the Foreign IMPORT TRADE of the United Kingdom, during the Years 1835, 1836, and 1837.

Importing Countries.	1835.	1836.	1837.
GREAT BRITAIN,.....	£47,463,610	£55,733,418	£53,224,874
IRELAND,.....	1,447,932	1,497,549	1,512,427
Total,.....	£48,911,542	£57,230,967	£54,737,301

II. TABLE exhibiting the Total Value or Amount of the Foreign EXPORT TRADE of the United Kingdom, for the Years 1835, 1836, and 1837.

Exporting Countries.	*Produce and Manufactures of the United Kingdom, according to the Real or Declared Value.*			*Foreign and Colonial Merchandise, calculated at the Official Rates of Valuation.*		
	1835.	1836.	1837.	1835.	1836.	1837.
GREAT BRITAIN,..	£46,926,370	£53,015,431	£41,911,898	£12,783,802	£12,384,538	£13,233,331
IRELAND,.....	445,900	353,141	303,040	13,922	7,174	10,291
Total,....	£47,372,270	£53,368,572	£42,214,938	£12,797,724	£13,233,622	£13,233,622

III. TABLE exhibiting the Quantity and Declared or Real Value of each of the principal Articles of British and Irish MANUFACTURES and PRODUCE *exported* from the United Kingdom in each of the Years 1836 and 1837.

Articles.		1836.		1837.	
		Quantity.	*Value.*	*Quantity.*	*Value.*
Apparel,.....	*Value*	. . .	£1,292,379	. . . .	£950,951
Arms and ammunition,.....	—	. . . .	411,286	. . . .	289,142
Bacon and hams,.....	*Cwts.*	14,536	44,883	12,312	37,549
Beef and pork (salted),.....	*Barrels*	48,832	164,920	48,604	164,196
Beer and ale,.....	*Tuns*	15,148	270,915	15,588	273,122
Books (printed).....	*Cwts.*	8,257	178,945	7,120	147,772
Brass and copper manufactures,.....	—	204,835	1,072,344	250,105	1,166,277
Butter and cheese,.....	—	75,243	300,674	60,054	242,610
Coal-culm and cinders,.....	*Tons*	916,868	332,861	1,113,610	431,545
Cordage,.....	*Cwts.*	53,058	87,401	43,763	77,451
Cotton manufactures,.....	*Yards*	637,667,627	17,183,167	531,373,663	12,727,989
Cotton-twist and yarn.....	*lbs.*	88,191,046	6,120,366	103,455,138	6,955,942
Cotton-hosiery, lace and small wares, ...	*Value*	. . . .	1,328,525	. . . .	912,192
Earthenware,.....	*Pieces*	62,795,317	837,774	48,366,457	563,238
Fish (herrings),.....	*Barrels*	131,141	134,590	134,351	145,632
Glass (entered by weight),.....	*Cwts.*	250,974	536,601	264,789	467,307
— (entered at value),.....	*Value*	. . . .	16,783	. . . .	10,460
Hardware and cutlery,.....	*Cwts.*	421,442	2,271,313	267,433	1,460,807
Hats (beaver and felt),.....	*Dozens*	53,984	148,282	37,178	105,135
Iron and steel,.....	*Tons*	192,352	2,342,674	194,292	2,009,259
Lead and shot,.....	—	9,769	224,981	7,864	155,251
Leather (wrought and unwrought),.....	*lbs.*	2,042,471	322,546	1,647,000	255,818
Saddlery and harness,.....	*Value*	. . . .	94,059	. . . .	87,938
Linen manufactures (entered by the yard),	*Yds.*	82,088,760	3,238,031	58,426,333	2,063,425
Linen thread, tapes and small wares,.....	*Value*	. . . .	88,294	. . . .	64,020
Linen yarn,.....	*lbs.*	4,574,504	318,772	8,373,100	479,307
Machinery and mill-work,.....	*Value*	. . . .	302,092	. . . .	493,468
Painters' colours,.....	—	. . . .	210,900	. . . .	151,513
Plate, plated-ware, jewellery and watches,	—	. . . .	338,889	. . . .	258,076
Salt,.....	*Bushels*	9,622,427	173,923	9,961,884	193,621
Silk manufactures,.....	*Value*	. . . .	917,822	. . . .	503,673
Soap and candles,.....	*lbs.*	15,813,406	295,510	13,864,022	251,023
Stationery,.....	*Value*	. . . .	301,121	. . . .	198,349
Sugar (refined),.....	*Cwts.*	248,644	698,190	227,807	453,984
Tin (unwrought),.....	—	11,152	61,847	17,271	74,737
Tin and pewter wares, and tin-plates,.....	*Value*	. . . .	387 951	. . . .	371,848
Wool (sheep's and lamb's),.....	*lbs.*	3,942,407	332,374	2,647,874	185,350
Woollen manufactures, viz.					
Entered by the piece,.....	*Pieces*	2,224,566	6,647,392	1,519,433	4,034,000
Entered by the yard.....	*Yards*	9,099,824	754,364	5,923,076	487,194
Hosiery and small wares,.....	*Value*	. . . .	237,598	. . . .	134,783
Woollen and worsted yarn,.....	*lbs.*	2,546,177	358,690	2,513,718	333,098
All other articles,.....	*Value*	. . . .	1,986.543	. . . .	1,701,692
TOTAL DECLARED VALUE,.....		. . . .	£53,368,572	. . . . .	£42,070,744

TABLE exhibiting, in detail, a Comparative View of the Colonial and Foreign EXPORTS of the United Kingdom in 1837 and 1834; also the Value of the IMPORTS from each Colony or Foreign Country during the latter Year.

Countries.	Exports from the United Kingdom. (Declared Value.)		Imports into the United Kingdom in 1834. (Official Val.)
	1837.	1834.	
Germany,	£4,898,016	£4,547,166	£1,437,977
United States of America,	4,695,225	6,844,989	10,276,628
East India Company's territories and Ceylon,	3,612,975	2,578,569	4,317,639
British West Indies,	3,456,745	2,680,024	8,410,114
Holland,	3,040,029	2,470,267	1,103,676
Italy and the Italian islands,	2,406,066	3,282,777	1,199,210
British North America,	2,141,035	1,671,069	1,167,823
Russia,	2,046,592	1,382,300	4,128,844
Brazil,	1,824,082	2,460,679	1,297,305
France,	1,643,204	1,116,885	2,808,256
Portugal (including the Açores, Madeira, and Cape Verd Isles),	1,183,015	1,702,383	731,816
Turkey,	1,158,013	1,207,941	741,280
Hayti, Cuba, and other Foreign West Indies,	1,062,763	1,270,302	340,289
New South Wales and other Australian settlements,	921,568	716,014	249,415
Gibraltar,	906,155	460,719	47,355
Belgium,	804,917	750,059	304,239
States of the Rio de la Plata,	696,104	831,564	660,120
China,	678,375	842,852	3,506,923
Chili,	625,545	896,221	142,765
Mexico,	520,208	459,610	261,417
Cape of Good Hope,	488,814	304,382	248,760
Peru,	476,374	299,235	123,086
Mauritius,	349,488	149,319	782,148
Sumatra, Java, the Philippines, and other islands in the Indian seas,	347,599	506,633	993,936*
Guernsey, Jersey, Alderney, Man, &c.	330,017	360,665	231,996
Spain (including the Canaries),	328,540	356,593	1,050,592
Western coast of Africa,	312,938	326,483	475,570†
Egypt,	220,080	158,877	32,331
Columbia,	170,451	199,996	117,309
Prussia,	131,536	136,423	723,888
Ionian Islands,	124,465	94,498	207,393
Malta,	103,680	242,696	14,956
Denmark,	103,448	94,595	331,816
Sweden,	101,121	63,094	206,342
Norway,	72,413	61,988	88,774
Tripoli, Tunis, Algiers, and Morocco,	54,007	14,823	128,248
Morea and Greek Islands,	15,431	37,179	43,367
St. Helena,	9,645	31,615	2,184
Syria and Palestine,	5,413	....	....
Isle of Bourbon,	3,795	7,091	....
Arabia,	787	250	....
Guatemala,	78	30,366	13,739
TOTALS,	£42,070,744	£41,649,191	£49,051,416

In selecting the details given in the foregoing tables, we have been guided by considerations as much of necessity as convenience. A full account of the export trade of the kingdom, up to the year 1837, is to be found in official publications; but it is otherwise with the import trade, as we have been unable to discover any notice of its amount, distinguishing the several countries with which it is conducted, later than 1834. We have, therefore, in the fourth table, thought it proper to state in an opposite column the value of the exports to these countries during the same year. In comparing the value of the exports during the several years indicated in the third and fourth tables, our readers must have remarked the extraordinary fluctuations which takes place in this branch of British commerce, and especially the prodigious falling off in the quantity and value of the exports of 1837, as compared with those of 1836. The latter year, however, was marked by great commercial activity, and the former by considerable mercantile depression and embarrasment, principally occasioned by the unsettled state of the trade between this country and the United States, one of the great markets for our cotton and other manufactures. A reaction has since taken place, for in 1838 the exports of cottons, woollens, linens, hardware, and the metals, amounted in value to about £39,000,000, being nearly £5,500,000 above the value of these articles exported in 1837, though £4,700,000 short of the value of the same exports in 1836. Before quitting this subject, we may remark, in reference to the foregoing tables, that although the *official*, or custom-house rate of valuation, greatly exaggerates the value of manufactured articles exported, yet it furnishes, in a manner nearer the truth, the value of imported merchandise. Accordingly, both the *official* and the *declared*, or *real values*, quoted in these tables, may be looked

* *Including* £765,725 from Singapore. † Including £75 from Eastern Africa and Madagascar.

upon as nearly correct.* We have not the means of reconciling the discrepancy in the amount of exports, as given in the second and third tables. The statement in both instances was derived from the same official publication.

The *distribution of the Foreign trade of the kingdom among the different sea-ports*, may in part be ascertained by a reference to the amount of duties collected at each custom-house. In thus determining the relative importance of the trade of a port, it ought, however, to be kept in mind that a very considerable *export* trade may be carried on from a port where but a trifling amount of *import* duties is collected; and it will also be seen from a table afterwards to be given, that the ports respectively take a different order of importance in regard to the shipping and tonnage belonging to each. In the following table we have arranged all the *ports in England and Wales* in the order of the amount of duties annually collected in each, on the average of two years, viz. 1836 and 1837.† Corresponding tables will be given under the heads of Scotland and Ireland.

	Amount of Duties collected.		*Amount of Duties collected.*
London,	£11,672,158	Bridgewater, *Somersetshire*,	£9,147
Liverpool, *Lancashire*,	4,400,962	Rye, *Sussex*,	7,535
Bristol, *Gloucester* and *Somerset*,	1,133,815	Wisbeach, *Cambridgeshire*,	7,823
Hull, *York, E. R.*	771,615	Bridport, *Dorset*,	6,059
Newcastle, *Northumberland*,	360,536	Maldon, *Essex*,	5,143
Gloucester, *Gloucestershire*,	149,534	Bideford, *Devon*,	5,078
Plymouth, *Devon*,	104,460	St. Ives, *Cornwall*,	4,612
Whitehaven, *Cumberland*,	94,460	Milford, *Pembrokeshire*,	4,531
Sunderland, *Durham*,	82,520	Dartmouth, *Devon*,	4,379
Exeter, *Devon*,	81,396	Swansea, *Glamorganshire*,	4,165
Chester, *Cheshire*,	75,247	Faversham, *Kent*,	3,431
Goole, *York, W. R.*	68,675	Beaumauris, *Anglesea*,	3,279
Yarmouth, *Norfolk*,	64,972	Woodbridge, *Suffolk*,	2,641
Stockton-upon-Tees, *Durham*,	58,007	Cowes, *Isle of Wight*,	2,496
Lynn, *Norfolk*,	55,995	Llannelly, *Carmarthenshire*,	2,339
Southampton,	47,284	Arundel, *Sussex*,	2,197
Portsmouth, *Southampton*,	47,067	Scarborough, *York, N. R.*	2,128
Dover, *Kent*,	43,270	Padstow, *Cornwall*,	1,662
Lancaster, *Lancashire*,	41,173	Harwich, *Essex*,	1,659
Ipswich, *Suffolk*,	37,377	Lyme, *Dorset*,	1,632
Truro, *Cornwall*,	37,011	Cardigan, Aberystwith, *Cardiganshire*,	1,551
Carlisle, *Cumberland*,	29,219	Whitby, *York, N. R.*	1,328
Douglas, *Isle of Man*,	26,519	Clay and Blackney, *Norfolk*,	1,266
Penzance, *Cornwall*,	23,704	Chichester, *Sussex*,	1,239
Falmouth, *Cornwall*,	23,204	Chepstow, *Monmouth*,	1,002
Shoreham, *Sussex*,	21,811	Wells, *Norfolk*,	760
Rochester, *Kent*,	18,788	Deal, *Kent*,	565
Fowey, *Cornwall*,	17,216	Ilfracombe, *Devon*,	386
Colchester, *Essex*,	17,203	Southwold, *Suffolk*,	240
Gweek (on the river Hel), *Cornwall*,	14,405	Scilly Isles, *Cornwall*,	136
Boston, *Lincolnshire*,	13,900	Aldborough, *Suffolk*,	108
Newhaven, *Sussex*,	13,529	Bridlington, *York, E. R.*	94
Newport, *Monmouth*,	12,359	Leigh, *Essex*,	91
Weymouth, *Dorset*,	12,252		0
Barnstable, *Devon*,	11,243		
Poole, *Dorset*,	11,153	Total—England and Wales,	£19,824,492
Grimsby *Lincolnshire*,	10,830	Scotland,	1,606,891
Ramsgate, *Kent*,	10,118	Ireland,	1,991,210
Berwick-upon-Tweed,	9,265		
Cardiff, *Glamorganshire*,	9,247	Total—United Kingdom,	£23,422,593

The vast size of the *British Mercantile Navy*, together with its progress since the commencement of the present century, will be seen in the following—

TABLE exhibiting the NUMBER and TONNAGE of VESSELS, with the NUMBER of their CREWS, belonging to the BRITISH EMPIRE on the 31st December 1836 and 1837 respectively; also the same on the 30th September 1800.

	1836.			1837.			1800.		
	Vessels.	Tonnage.	Men.	Vessels.	Tonnage.	Men.	Vessels.	Tonnage.	Men.
England,	14,949	1,859,796	105,221	14,996	1,821,994	105,075	12,198	1,466,632	105,037
Scotland,	3,239	394,651	23,726	3,244	334,870	24,292	2,155	161,511	13,883
Ireland,	1,635	128,469	9,189	1,694	139,363	9,865	1,003	54,262	5,057
Isle of Guernsey,	87	9,494	675	90	9.280	678	130	10,647	1,412
— Jersey,	235	20,826	2,034	245	21,107	2,165			
— Man,	243	6,583	1,286	265	6,907	1,387	238	5,463	1,285
British Plantations,	5,432	442,897	28,506	5,501	457,497	30,044	2,161	157,364	12,047
	25,820	2,792,646	170,637	26,037	2,791,018	173,506	17,885	1,855,879	138,721

* The *official* rates of valuation were fixed in the year 1694; and as they have not since been altered, they are consequently inapplicable to articles, in the production of which improved machinery or processes have been employed.

† The total amount of duties collected in all the ports of England and Wales, was, in 1836, £20,327,687: 11: 9, and, in 1837, £19,321,324: 15: 2.

That portion of the mercantile navy belonging to England was, in 1835, thus distributed among its different ports: —

Ports.	*Ships.*	*Tons.*	*Men.*	*Ports.*	*Ships.*	*Tons.*	*Men.*
London,	2,828	566,152	32,392	Ramsgate,	85	5,546	332
Newcastle,	1,054	208,100	9,665	Berwick,	55	5,160	318
Liverpool,	996	207,833	11,511	Penzance,	94	5,002	474
Sunderland,	712	132,070	5,952	Rye,	90	4,699	361
Whitehaven,	443	65,878	3,490	Chepstow,	68	4,580	312
Hull,	503	63,524	3,783	Padstow,	81	4,533	301
Bristol,	281	42,913	3,899	Bridlington,	30	4,160	192
Yarmouth,	577	42,583	2,324	Ilfracombe,	63	3,897	222
Whitby,	252	39,954	2,065	Cardiff,	48	3,735	213
Plymouth,	373	30,701	1,805	Blackney and Clay,	64	3,734	258
Scarborough,	172	27,052	1,389	Llanelly,	72	3,637	236
Dartmouth,	373	27,140	1,760	Carlisle,	39	3,419	209
Beaumaris,	395	21,885	1,453	Wisbeach,	48	3,374	181
Exeter,	192	15,979	875	Shoreham,	55	3,372	225
Lynn,	120	15,283	736	Wells,	63	3,287	244
Poole,	153	15,113	939	Arundel,	35	3,034	171
Cardigan,	275	14,436	1,030	Woodbridge,	38	2,682	146
Stockton,	104	13,308	619	Chichester,	59	2,620	164
Gloucester,	246	13,237	1,113	Truro,	34	2,411	142
Goole,	167	12,586	469	Southwold,	34	2,310	164
Rochester,	274	12,364	744	Aldborough,	39	2,170	162
Ipswich,	154	11,308	595	Barnstaple,	37	2,063	119
Portsmouth,	201	11,968	730	Scilly,	41	2,038	236
Milford,	152	10,376	634	Bridport,	19	1,932	99
Lancaster,	131	9,633	527	Newhaven,	20	1,476	66
Bideford,	115	9,509	545	Lyme,	19	1,382	83
St. Ives,	117	9,019	608	Grimsby,	33	1,187	92
Boston,	175	8,982	528	Minehead (*Port of Bridgewater*),	....	.....	....
Swansea,	137	8,918	565	Gweek,	11	688	43
Colchester,	236	8,648	940	Deal,	23	641	132
Cowes,	170	8,530	737				
Southampton,	177	8,363	668				
Faversham,	229	8,270	594	Total,—			
Maldon,	136	6,955	413	England,	14,823	1,853,112	105,945*
Fowey,	95	6,827	411	Scotland,	3,287	335,820	23,924
Aberystwith,	129	6,737	442	Ireland,	1,637	131,735	9,282
Falmouth,	86	6,732	441	British Isles,	563	39,636	3,958
Newport,	61	6,082	323	Colonies,	5,211	423,458	27,911
Bridgewater,	77	5,796	615				
Dover,	111	5,702	355				
Weymouth,	73	5,698	306				
Chester,	85	5,627	429	Grand Total,	25,511	2,783,761	171,020
Harwich,	89	5,572	403				

There are no means of determining the actual number of ships and amount of tonnage employed in the *Coasting trade*, as distinguished from the Foreign trade of the kingdom. The following table exhibits the total shipping and tonnage (including repeated voyages of the same vessels) annually employed in the Coasting trade generally, distinguishing, however, the portion employed in the traffic between Great Britain and Ireland.

	Entered Inwards.				Cleared Outwards.			
	Years ending 5th January,				Years ending 5th January,			
	1837.		1838.		1837.		1838.	
	Ships.	Tonnage.	Ships.	Tonnage.	Ships.	Tonnage.	Ships.	Tonnage.
Employed in the Intercourse between Great Britain and Ireland,	9,820	1,179,062	10,299	1,202,104	14,725	1,490,788	16,347	1,585,634
Other Coasting Vessels,	113,975	9,158,483	117,712	9,207,266	118,616	9,271,902	122,443	9,315,563
Total,	123,795	10,337,545	128,011	10,409,370	133,341	10,762,690	138,790	10,901,187

The number and tonnage of vessels employed in the *Foreign trade* of the United Kingdom, and which entered inwards and cleared outwards at its several ports, during the two years undermentioned, was as follows (repeated voyages of the same vessels being included):—

* The numbers in this column do not correspond with the added result, but the difference is not sufficiently great to warrant the exclusion of an official table correct in other respects.

COUNTRIES *to which the Vessels belonged.*	ENTERED INWARDS.				CLEARED OUTWARDS.			
	Year ending 5th January,				Year ending 5th January,			
	1837.		1838.		1837.		1838.	
	Ships.	*Tonnage.*	*Ships.*	*Tonnage.*	*Ships.*	*Tonnage.*	*Ships.*	*Tonnage.*
United Kingdom and its Dependencies, ..	11,644	2,250,173	12,252	2,346,300	10,216	1,828,501	10,614	1,861,121
Russia,	225	61,435	221	61,791	104	29,290	119	33,562
Sweden,	198	26,900	140	18,354	135	16,252	118	14,511
Norway,	873	144,162	723	116,578	213	23,208	208	22,471
Denmark,	772	61,960	850	59,077	810	68,106	852	60,576
Prussia,	873	175,938	715	142,929	361	67,462	406	71,808
Other German States,	773	57,843	872	60,607	528	45,618	581	44,549
Holland,	408	34,432	438	38,773	369	36,114	404	41,438
Belgium,	309	37,188	311	34,317	330	40,624	345	39,363
France,	799	33,805	801	34,547	867	59,115	1,132	87,382
Spain,	57	6,233	63	7,460	53	6,566	55	6,691
Portugal,	83	9,231	75	7,984	51	7,033	29	3,270
Italian States,	47	9,608	44	9,756	50	10,560	49	11,093
Other European States,	....	.....	....	.....	....	.....	....	.....
United States of America,	539	222,803	606	276,844	562	254,565	611	279,429
Other States in America, Africa, & Asia,	3	656	2	512	5	2,413	3	754
TOTAL,	17,603	3,132,367	18,113	3,215,829	14,654	2,495,517	15,526	2,578,018

The following table by Mr. Porter exhibits the actual and proportionate amount of *tonnage employed in our commerce with the principal geographical divisions of the world* in 1835, and also the same in 1802; thus affording the means of ascertaining the increase of the import and export trade of the United Kingdom between the one period and the other.

PRINCIPAL GEOGRAPHICAL DIVISIONS.	INWARDS.				OUTWARDS.			
	1802.		1835.		1802.		1835.	
	Actual Amount of British and Foreign Tonnage employed.	*Centesimal Proportions.*	*Actual Amount of British and Foreign Tonnage employed.*	*Centesimal Proportions.*	*Actual Amount of British and Foreign Tonnage employed.*	*Centesimal Proportions.*	*Actual Amount of British and Foreign Tonnage employed.*	*Centesimal Proportions.*
European Kingdoms or States, ..	1,178,705	65.00	1,615,036	48.79	1,034,517	63.28	1,615,563	48.59
British Dominions in Europe (excluding Ireland),	67,678	3.79	172,483	5.21	60,275	3.69	165,233	4.97
United States of America,	111,118	6.12	318,846	9.63	123,108	7.53	370,924	11.15
Foreign Colonies, &c. in West Indies and America,	7,866	0.43	87,604	2.64	1,804	0.11	101,806	3.06
British Colonies in West Indies and America,	336,344	18.54	866,524	26.21	268,463	16.42	803,596	24.17
Africa,	7,270	0.40	40,131	1.21	44,070	2.70	48,586	1.46
Cape of Good Hope and India, ..	67,627	3.72	161,473	4.88	59,546	3.64	149,958	4.51
New South Wales, &c.	....	...	16,019	0.48	....	...	35,919	1.08
Greenland and Southern Fisheries,	36,448	2.00	31,608	0.95	43,021	2,63	33,626	1.01
TOTAL,	1,813,256	100.00	3,309,724	100.00	1,634,804	100.00	3,325,211	100.00

There is one branch of the mercantile navy of the United Kingdom which merits especial notice, namely, the *Steam Marine*, of which it may truly be said, that the progress has been quite unprecedented. On the 18th January 1812, Henry Bell's diminutive steam-boat, the "*Comet*," of 30 tons burden and 3-horse engine-power, was launched on the waters of the Clyde; and little indeed could the most sanguine then have imagined, that in twenty-six years after the date of this humble commencement of European steam-navigation, magnificent vessels of 1400 and 1800 tons burden, propelled by engines of 460 and 500 horse-power, would bring the shores of Britain and America within thirteen days sail of each other.* The progress of the British steam mercantile navy, from the date of its commencement to 1836, is lucidly stated in the following table by Mr. Porter, which we have brought up to the year 1837.

* Steam navigation may be dated from the establishment, in 1806 or 1807, of Fulton's steam-boat, which plied successfully on the river Hudson, between New York and Albany.

TABLE exhibiting the NUMBER and TONNAGE of the MERCANTILE STEAM-VESSELS belonging t the British Empire in each Year from 1814 to 1837.

Years.	England.		Scotland.		Ireland.		Guernsey, &c.		Colonies.		Total.	
	Vessels.	Tonnage.	Vessels.	Tonnage.	Vessels.	Tonnage.	Vessels.	Tonnage.	Vessels.	Tonnage.	Vessels.	Tonnag
1814	. . .	. . .	1	69	. . .	. . .	. . .	. . .	1	387	2	45
1815	3	209	5	429	. . .	. . .	. . .	. . .	2	995	10	1,63
1816	5	315	7	632	. . .	. . .	. . .	. . .	3	1,665	15	2,61
1817	7	462	6	514	1	63	. . .	. . .	5	2,911	19	3,95
1818	10	1,586	8	683	1	63	. . .	. . .	8	4,109	27	6,44
1819	11	1,459	11	835	2	264	. . .	. . .	8	4,109	32	6,65
1820	17	1,639	14	1,127	3	252	. . .	. . .	9	4,225	43	7,24
1821	29	3,377	26	2,344	4	330	. . .	. . .	10	4,483	69	10,53
1822	32	3,323	28	2,701	5	434	. . .	. . .	11	4,668	96	13,12
1823	69	7,327	26	2,347	6	487	. . .	. . .	10	3,792	111	14,15
1824	80	8,642	29	2,682	5	409	2	214	10	3,792	126	15,73
1825	112	12,280	26	3,292	3	192	2	214	15	4,309	168	20,28
1826	162	16,791	51	4,496	15	2,899	3	214	18	4,558	248	28,95
1827	173	17,734	59	5,390	21	4,194	2	214	20	4,958	275	32,49
1828	191	18,367	56	4,903	25	4,740	2	214	19	3,808	293	32,03
1829	203	19,085	57	5,399	27	5,017	2	214	15	2,568	304	32,28
1830	203	18,831	61	5,687	31	5,491	3	330	17	3 105	315	33,44
1831	223	20,304	62	5,777	35	6,181	4	433	23	4,750	347	37,44
1832	235	20,813	73	7,205	40	7,220	4	474	28	5,957	380	41,66
1833	268	23,290	71	7,075	43	7,757	5	555	28	6,340	415	45,01
1834	301	27,059	77	8,187	46	8,183	6	711	32	6,595	462	50,73
1835	344	30,351	85	9,833	68	12,583	6	718	35	7,035	538	60,52
1836	388	34,314	96	11,588	71	13,460	7	914	39	7,693	600	67,96
1837	422	37,340	109	13,368	87	18,437	6	832	44	8,411	668	78,28

The official returns for 1838 are not yet completed, but the following tabul statement of the approximate *number*, *tonnage*, and *power* of *vessels composing t mercantile steam marine of the United Kingdom and its dependencies*, at the end that year, has appeared in a parliamentary paper.

	Vessels.	*Tonnage.*		*Horse Power.*
		Registered.	Computed.	
Great Britain and Ireland (1838)—				
Registered,.....	677	78,664	140,718	56,490
Not Registered,.....	83			
Guernsey, Jersey, and Man (1837),....	6	832	1,456	600
Colonies (1837),.....	44	8,411	15,664	6,160
GRAND TOTAL,.....	810	87,907	157,840	63,250

From this statement it would appear, that the number of steam-vessels belongin to the United Kingdom and Channel dependencies is 766. Of these, 484 may b considered as river-steamers and small coasters, and 282 as large coasters and sea going ships. A return by the Custom-house affords the following details in regar to the 677 registered vessels:—

Number of Vessels.	*Computed Horse-power per vessel.*	*Computed Tonnage per vessel.*
256	25	66
145	47	122
84	90	211
63	120	287
76	147	361
41	266	532
10	300	769
1	450	1,340
1	500	1,855

The number of steam-vessels registered in the ports of England and Wales is 483 Of these, 125, chiefly of small size (averaging from 18 to 20 tons, and generally em ployed as tug-boats), belong to the port of Newcastle; 51 ply in the Humber, Ouse and Trent; and 152 make use of the port of Liverpool.

It would be a difficult matter to ascertain the amount of traffic as regards passen gers and goods conveyed by steamers, no entry being required at the Custom-hous for vessels with passengers only, or in ballast. From one of Mr. Porter's tables,* i

* *Progress of the Nation*,—Second Section—Chap. *Steam Navigation*.

appears that in 1833 the approximate total number and tonnage of vessels, British and Foreign, conveying passengers and goods, which arrived at and departed from the ports of the United Kingdom (including repeated voyages), was 25,705 vessels of 3,597,955 aggregate tonnage. The Custom-house return for 1837 was as follows:—

Countries to which the Vessels belonged.	Coasting Trade.				Foreign Voyages.			
	Inwards.		Outwards.		Inwards.		Outwards.	
	Vessels.	*Tonnage.*	*Vessels.*	*Tonnage.*	*Vessels.*	*Tonnage.*	*Vessels.*	*Tonnage.*
United Kingdom.....	15,481	2,671,577	15,019	2,604,739	1,123	217,640	1,278	234,919
Hanse Towns,.....	...	....	...	....	1	80	1	109
Holland,.....	...	....	...	....	32	7,164	40	10,080
Belgium,.....	...	....	...	....	25	4,926	27	5,319
France,.....	...	....	...	....	2	335	138	10,665
Spain,.....	...	....	...	....	...	....	1	165

In respect to import trade, and amount of shipping and tonnage, the relative importance of the several ports of England and Wales has been sufficiently indicated in the preceding tables; but it is not so easy accurately to define the *nature of the trade* carried on at each. London has for centuries been styled the "Great Emporium of Nations," as its commerce has extended, and still extends, to every region of the globe. It is, however, peculiarly the chief seat of British commerce with India and China. Liverpool and Bristol are the great seats of the American and West-Indian trades. Bristol, Hull, Newcastle, Whitehaven, Exeter, Yarmouth, Lynn, Scarborough, Dartmouth, &c. are largely engaged in the trade with Spain and Portugal and the Mediterranean. Hull, Newcastle, Plymouth, Sunderland, Yarmouth, Goole, Stockton, Lynn, Portsmouth, Southampton, &c., are the chief seats of the Baltic trade. Ipswich, Boston, Wisbeach, Yarmouth, Lynn, and Poole, are among the principal ports engaged in the corn trade. Nearly a fourth part of the tonnage engaged in the trade between Britain and Ireland enters the port of Liverpool; and the latter engrosses nearly a twentieth part of the other coasting-trade of the kingdom. The great ship-building ports, are, London, Sunderland, Newcastle, Hull, Liverpool, Yarmouth, &c. We have already mentioned (see *antè*, p. 203) the principal ports engaged in the distant fisheries.

The *internal trade* of England and of Great Britain generally, must be very great, but there are not sufficient data on which to found even an approximate estimate of its amount. The banking, or money-trade of England and Wales, was, in January 1839, conducted by 108 joint-stock banks, and 407 private banks, having in the aggregate 1208 establishments throughout the country.* In no other country in the world, with perhaps the exception of the United States of North America, has the joint-stock association principle been followed out to such a prodigious extent as in England. Independently of numerous provincial associations, of which there are only local records, there are to be found at present in the principal London commercial list,† the names of upwards of 280 Joint-Stock Companies, the aggregate subscribed capital of which exceeds the enormous sum of £167,000,000. Roughly stated, this capital is thus apportioned to the following objects,—Canals, £27,500,000; Docks, £2,500,000; Bridges, £2,000,000; Assurance Companies, £44,500,000; Joint-Stock Banks, £33,000,000; Gas-Light Companies, £4,000,000; Water Companies, 2,000,000; Mines, £10,000,000; Iron Railways, above £30,000,000; and Companies for miscellaneous objects, British and Colonial, £12,000,000.

The immense *preponderance of the commerce of England*, as compared with that of the other great divisions of the United Kingdom, has been shown in more than one instance in the preceding tables. In farther illustration of the relative amount of the business and the wealth of the different parts of the kingdom, we subjoin a statement of the amount of the gross receipt of four branches of the public revenue, collected

* The aggregate amount of notes in circulation in England and Wales, in September 1838, was as follows:—

Bank of England circulation,.....		£19,665,000
Joint-Stock Bank	ditto, ...	4,281,151
Private Bank	ditto, ...	7,083,811
Total,.....		£31,029,962

† Wetenhall's *Course of the Exchange, &c.*

in England, Scotland, and Ireland respectively, in the year ending 5th January 1838; also a statement of the revenue from the land and assessed taxes in Great Britain during the same year.

	Revenue of Excise.	*Revenue of Stamps.*	*Post-Office Revenue.*	*Revenue of Taxes.*
England and Wales,.....	£11,033,050	£6,250,923	£1,979,913	£3,667,735
Scotland, ...	2,426,992	529,538	221,059	227,607
Ireland, ...	1,835,392	475,677*	261,296	.....
Total,.....	£15,295,434	£7,256,128	£2,462,268	£3,896,342

Income of the Population. — Estimating the average annual income of each person in Great Britain at from £16 to £17, Mr. M'Culloch concludes that the total gross income of the population is at present from £290,000,000 to £310,000,000. The late Lord Liverpool estimated the same in 1822, at from £250,000,000 to £280,000,000.† The average annual income of each person in Ireland, is supposed by Mr. M'Culloch not to exceed £6.

Our limits preclude us from entering into details of the *condition of the working classes*, and the state of *pauperism* in England. It may be sufficient to remark, that pauperism was on the increase till 1818, in which year the enormous sum of £7,870,800 was expended for the relief the poor. In 1837 the amount so expended was £4,044,471, a decrease evidently showing an improvement in the condition of the mass of the people. The progress of *Savings Banks*, since their first insitution in 1817, also exhibits a pleasing proof of the same fact. In November 1837 there were 396 banks for savings in England, and 23 in Wales, in which the aggregate amount of deposits by individuals was £16,578,849, and by Friendly Societies and Charitable Institutions (in all 10,502 in number), £1,055,038; together £17,633,887. The total number of depositors was 547,910, and in 293,750 instances the sum invested by each individual averaged about £7. It is stated by Mr. Senior, on the authority of answers to inquiries addressed by the Poor-Law Commissioners to a large number of parishes in various counties in England, that a *labouring man's earnings* will, on an average, be £27 : 17 : 10 annually, and that with the addition of the earnings of his wife and four children, aged 14, 11, 8, and 5 respectively (the eldest a boy), the annual incomes of the family will be £41 : 17 : 8. In France the aggregate earnings of such a family would be 840 francs, or £33, 12*s.* per annum; in some other countries the amount would be much smaller.

Internal Communication. — The immense facilities of internal communication which England possesses, and which have so long excited the admiration of foreigners, naturally fall to be considered under the several heads of *Roads*, *Canals*, and *Railways*.

§ 1. *Roads.*

The roads of England and Wales are of two classes; namely, *turnpike roads*, kept up by the imposition of tolls, and *parish* or *cross-roads*, which are made and maintained by rates levied on the several parishes in which they are situate. The total length of the former at present exceeds 23,000 miles; that of the latter in 1818 was upwards of 95,000 miles. In 1835, the total income of the turnpike trusts in England was £1,701,483, and the total expenditure, £1,681,411. The debt previously incurred, and secured by mortgages of tolls, &c. &c. on the turnpike roads, amounted in 1835 to £8,022,848; at present it amounts nearly to £9,000,000.

The distribution of turnpike roads through the respective counties of England and Wales was in 1829 as follows: —

	Miles.
Bedfordshire,	238
Berkshire,	319
Buckinghamshire,	165
Cambridgeshire,	278
Cheshire,	349
Cornwall,	318
Cumberland,	215
Derbyshire,	574
Devonshire,	782
Dorsetshire,	347
Durham,	359
Essex,	249
Gloucestershire,	840
Hampshire,	810
Herefordshire,	553
Hertfordshire,	170
Huntingdonshire,	146
Kent,	586
Lancashire,	631
Leicestershire,	445
Lincolnshire,	538
Middlesex,	168
Monmouthshire,	315
Norfolk,	271
Northamptonshire,	358
Northumberland,	479
Nottinghamshire,	302
Oxfordshire,	342
Rutlandshire,	18
Shropshire,	988
Somersetshire,	746
Staffordshire,	630
Suffolk,	279
Surrey,	281
Sussex,	623
Warwickshire,	477
Westmorland,	284
Wiltshire,	768
Worcestershire,	565
Yorkshire,	1,448
Total, England,	18,244
Wales.	*Miles.*
Anglesea,	25
Brecknockshire,	169
Cardiganshire,	250
Carmarthenshire,	319
Carnarvonshire,	129
Denbighshire,	165
Flintshire,	85
Glamorganshire,	355
Merionethshire,	261
Montgomeryshire,	450
Pembrokeshire,	173
Radnorshire,	250
Total, Wales,	2,631
England and Wales,	20,875
Scotland,	3,666
Total, Great Britain,	24,541

* In 1837.

† The gross amount of income in Great Britain, assessed in 1815 under the Property Tax Act, was £166,222,128; professional incomes or wages under £50 yearly were however exempted from this tax.

§ 2. *Canals.*

In England the artificial system of navigation has been in active operation, on a very extensive scale, for more than half a century. The first canal was that of *Sankey Brook*, which was completed in 1760; the *Duke of Bridgewater's Canal* was formed in 1761; and these were succeeded at various intervals by others. In addition to making canals, such of the rivers as are capable of improvement have been rendered navigable, so that there is now no spot south of Durham which is more than 15 miles distant from water-communication. The aggregate length of the canals of England exceeds 2,300 miles, to which we may add 1,800 miles of river navigation artificially improved, forming in all a magnificent system of inland water-communication, to which Holland alone, of all the European countries, can present a parallel. All the great rivers of England are connected with each other by means of canals; and of the latter, the most important stretch generally from east to west. In the northern part of the country, the great chain of inland navigation commences in the *Lancaster Canal*, in Lancashire and the south of Westmoreland. This canal extends from Kendal, by Lancaster and Preston, to Wigan, and it communicates with Liverpool by the *Leeds and Liverpool Canal*. From Liverpool the chain is continued in the river *Mersey*, the *Duke of Bridgewater's Canal*, and the *Trent and Mersey Canal*, or *Grand Trunk*. From the latter it stretches to the Thames by the united lines of the *Coventry* and *Oxford Canals*. To the south of the Thames, the *Wye Navigation*, extending to Guildford, connects it with the *Wye and Arun Canal*, and the latter with that of *Arundel and Portsmouth*, thus completing a line of inland navigation more than 600 miles in length, extending from within forty-five miles of the northern borders of England, to the coast of the Channel.

The following is an alphabetical list of the principal channels of inland navigation: —

Aberdare Canal—about 6¼ miles long. This is a branch of the Cardiff or Glamorgan canal, and terminates at Ynys Cynon, ¾ of a mile from Aberdare.

Adur River, in Sussex—has been rendered navigable for 14 miles from the sea, to Binesbridge in West Grinstead.

Aire and Calder Navigation.—The river Aire, in Yorkshire, is navigable for sloops of sixty tons, for 40 miles up to Leeds, where the Leeds and Liverpool canal begins. The river Calder falls into the Aire, about 10 miles below Leeds, and is navigable about 10 miles to Wakefield, where the Calder and Hebble navigation commences.

Alford Canal—is to extend from Alford in Lincolnshire to the sea at Anderby, a distance of 6¾ miles.

Ancholme and Caistor Navigations—join the Humber above Hull; the former being 26, the latter, which joins it from the east, being 4 miles long.

Andover Canal—from Southampton water to near Andover, about 22½ miles long.

Arun River Navigation, in Sussex, 13 miles long, partly by the course of the river, and partly by cuts to Arundel haven. From this the river itself has been rendered navigable to Arundel port, making a total length of 26¼ miles.

Ashby-de-la-Zouche Canal—passes by a very winding course northward for 26¼ miles from the Coventry canal to Ashby.

Ashton and Oldham, or *Ashton-under-Lyne Canal*—branches off from the Rochdale canal at Manchester, and terminates in the Huddersfield canal at Duckenfield-bridge, a distance of 11 miles. It has several branches.

Avon River, Hampshire—was once made navigable for 36 miles, but the works have been allowed to go to ruin, and it is now navigable for only 2 miles from the sea.

Avon River, Warwickshire—navigable from Stratford to the Severn, at Tewksbury, a distance of 44 miles.

Avon River, Gloucestershire—navigable from Bath to King's Road, below Bristol, a distance of 26¼ miles, and forms the harbour of Bristol.

Axe River, Somersetshire—navigable for 9 miles from the sea.

Barnsley Canal—begins in the river Calder, a little below Wakefield-bridge, and terminates at Barnby basin, a distance of 15 miles.

Basingstoke Canal—commences at Westley on the Wey, about 2 miles from the Thames, and extends 37 miles, to Basingstoke.

Baybridge Canal, in Surrey—proceeds from Binesbridge, along the course of the Arun, to Baybridge, a distance of 3¾ miles.

Birmingham and Fazeley Canal—extends from Birmingham to Fazeley, near Tamworth, a distance of 15 miles, with a fall of 248 feet. The remaining 5¼ miles to Whittington brook are level.

Birmingham (Old) Canal—proceeds from Farmer's-bridge in Birmingham, to the Staffordshire and Worcestershire canal at Autherley. This canal communicates with the Worcester and Birmingham canal at Birmingham, with the Dudley canal near Tipton-green, and with the Wyrley and Essington canal near Wolverhampton. By means of its canals, Birmingham communicates with the most important towns in England and Wales.

Birmingham and Liverpool Junction Canal—extends for 39 miles from the Staffordshire and Worcestershire canal near Autherley, to the Ellesmere and Chester canal near Dorford-hall.

Blyth River, Suffolk—navigable to Halesworth Bridge, about 9 miles from the sea.

Bourn-Eau-River—navigable from the river Glen (Norfolk) for 3½ miles, to the town of Bourn.

Bradford Canal—extends from the Leeds and Liverpool canal to Bradford, a distance of 3 miles.

Brecknock and Abergavenny Canal, in South Wales—33 miles long.

Bridgewater's Canal (Duke of), Lancashire and Cheshire—extends from Manchester to Runcorn Gap, in the tideway of the Mersey, a distance of 27 miles. This canal was formed in 1761, and in 1795 it was extended to the town of Leigh, with a branch to Chatsmoss.

Bridgewater and Taunton Canal—in Somersetshire. Length 42½ miles.

Britton Canal—extends from the River Neath to Swansea harbour, a distance of 4¼ miles.

Bude and Launceston Canal—extends by a circuitous course from Bude haven in Cornwall, to Thornbury, a distance of 21¼ miles. A branch, 19 miles long, passes along the west bank of the Tamar, to near Launceston.

Bure River, Norfolk—navigable from Aylsham to near Yarmouth, a distance of 40 miles. Of its affluents, the *Ant* is navigable for 8 miles, and the *Thurn* for 7 miles.
Bury River, between Caermarthenshire and Glamorganshire—navigable for about 12 miles from the sea, to the mouth of the river Loughor, which continues the navigation 2 miles farther.
Bute Ship Canal—extends from Cardiff harbour to the town of Cardiff.
Calder and Hebble Navigation—extends from the Aire and Calder navigation near Wakefield, to Sowerby Bridge wharf, near Halifax, a distance of 22 miles.
Cam, or *Granta River*—navigable 14 miles from Cambridge, to its mouth, in the Great Ouse at Harrimere.
Camel River, Cornwall—navigable for 8½ miles.
Canterbury Navigation, or *River Stour*—partly natural, partly artificial, extends from Canterbury to Sandwich, a distance of 21 miles.
Carlisle Canal, 11½ miles long—extends from Carlisle to the Solway Firth, near Bowness.
Chelmer and Blackwater Navigation, Essex—extends from the basin at Chelmsford, to the tideway at Collier's reach, a distance of 14 miles, partly by the course of the river Chelmer, and partly by cuts. The length of the Blackwater to the sea is 11 miles.
Chesterfield Canal—extends from the Tees at Stockwith, to Chesterfield, a distance of 46 miles, with a tunnel of 2850 yards at its summit-level.
Colne River—navigable from Hythe, near Colchester, to the sea.
Conway River, Denbighshire—navigable for 13½ miles from the sea.
Coombehill Canal—extends from the village of this name, in Gloucestershire, to the Severn, a distance of 3½ miles.
Coventry Canal—extends from the Trent and Mersey, or Grand Trunk canal on Fradley Heath, to Coventry, a distance of 37¾ miles.
Cromford Canal, 18 miles in length—extends from the Nottingham canal, to Cromford, near Matlock in Derbyshire. It has several tunnels; one of them, at Ripley, is 2966 yards long.
Crouch River, Essex—navigable for 16 miles.
Croydon Canal—extends 9½ miles from the Thames at Deptford to Croydon.
Darent River—navigable about 4 miles in the tideway, from Dartford to Longreach on the Thames.
Dart River, Devonshire—navigable about 12½ miles from the sea.
Dearne and Dove Canal—extends 9½ miles from the Don or Dunn river, between Swinton and Mexborough to aqueduct of the Barnsley canal over the river Dearne.
Deben River, Suffolk—navigable about 9½ miles from the sea.
Dee River, Cheshire—navigable for vessels of 300 tons, by a new channel of 8 miles long, cut from Chester to the estuary, which extends farther to the Irish Sea, a distance of 15 miles.
Derby Canal—extends from the Trent, near Swarkston, to Little Eaton, a distance of about 9 miles. From the east bank of the Derwent, a branch extends 8½ miles to the Erewash canal.
Derwent River, Derbyshire—navigable from Derby to the Trent at Wilden Ferry, a distance of 13 miles.
Derwent River, Yorkshire—navigable from Yedingham Bridge to Barmby, on the Ouse, a distance of 49½ miles.
Donnington-wood Canal—commences in the Shropshire canal, and runs north-east for 7 miles, to Pave Lane wharf, near Newport.
Driffield Navigation, 11 miles in length—extends from the river Hull, Yorkshire, to Great Driffield.
Droitwich Canal—extends 5½ miles from Droitwich to Hawford, on the Severn.
Dudley Canal—extends from the Worcester and Birmingham canal, near Selby-oak, in Worcestershire, to the Old Birmingham canal, near Tipton, a distance of 13 miles. It has three tunnels:—one at Dudley, 2926 yards; one at Lapal, 3776 yards; and one at Grotsy-hill, 623 yards.
Dun River Navigation—partly natural, and partly artificial, extends about 39 miles from the Ouse at Goolebridge to Tinsley, near Sheffield.
Eden River, Cumberland—has been made navigable for 10½ miles, from the Solway Firth, to Carlisle Bridge.
Ellesmere and Chester Canal—extends from the Mersey, 10 miles SE. of Liverpool, by Chester, to the Montgomeryshire canal, a distance of 61 miles, passing the river Dee by the famous iron-aqueduct at Pont-y-Cysylte. The length of the main line is 61 miles; it has, besides, several collateral branches, in all 109 miles.
English and Bristol Channels Ship Canal—was intended to run from Seton Bay, on the English Channel, to Bridgewater Bay, on the Bristol Channel, a distance of 44½ miles; but has not been carried into effect.
Erewash Canal—extends from the Cromford canal, near Langley Bridge, to the Trent, near Sawley Ferry, being 11¾ miles long. The *Nut-brook Canal* proceeds from the middle of this. And farther down it receives a branch of the Derby canal.
Exe (Estuary of the), Devonshire—navigable from Exeter to Topsham, a little above which a canal runs up the west side of the river for fully 3 miles.
Foss Navigation, in the North Riding of Yorkshire, follows the course of the river Foss for about 12½ miles to the Ouse at York.
Foss-dike Navigation—extends from the Trent at Torksey, to the river Witham, a distance of 11 miles. This canal is supposed to have been first formed by the Romans.
Gippen, or *Gipping River*, Suffolk—has been made navigable for 16 miles, from near Stowmarket, to the tideway of the Orwell.
Glamorganshire, or *Cardiff Canal*—commences near the mouth of the river Taff, and extends to Merthyr Tydvil, the length being about 25 miles, with a rise of 611 feet.
Glastonbury Navigation—extends partly along the river Brue, and partly by a canal, from the Bristol Channel to Glastonbury, for 14½ miles.
Gloucester and Berkley Ship Canal—begins in the Severn at Sharpness Point, about 3 miles north of Berkley, and terminates at Gloucester. The distance by the canal is only 16½ miles, while by the course of the Severn it is 28 miles, with a difficult and often dangerous navigation.
Grand Junction Canal—proceeds from the Thames at Brentford, to the Oxford canal, the length being 90½ miles. A branch extends for 13½ miles to Paddington. Other branches connect it with Wendover, Aylesbury, Buckingham, and the Nen, near Northampton.
Grand Surrey Canal—4 miles and 2 chains long, connecting the Thames, near the Tunnel, with the districts of Walworth and Camberwell.
Grand Union Canal—connects the Leicester Union canal, near Foxton, with the Grand Junction canal, at Long-Buckley, and is 45 miles long.
Grand Western Canal—Somersetshire and Devonshire—connects the Bristol and English Channels by a line of canal, commencing at the river Tone or Tone near Taunton, and continued to the river Exe at Tiverton. Its length is 35 miles.
Grantham Canal—proceeds from Grantham to the Trent, a distance of 33 miles. A branch of 3½ miles goes to Bingham.
Gresley Canal—forms a short connecting portion between, or in the line of the Newcastle-under-Line canal, and the Newcastle under-Line Junction canal.
Hartlepool Ship Canal, Durham—connects Hartlepool harbour with the sea. It is 300 yards long.

Hereford and Gloucester Canal—extends from the Severn at Gloucester to Hereford. The total length is 35¼ miles, with three tunnels of 2192, 1320, and 440 yards respectively.
Hertford Union Canal—a cut of 1 mile in length, to connect the Hackney cut of the river Lea navigation with the Regent's canal. It is also called the *Lea-Union*, and *Sir George Ducket's Canal*.
Horncastle Navigation—extends from the Old Witham river, near Tattershall, Lincolnshire, to Horncastle. It is 11 miles long.
Huddersfield Canal—commences at Huddersfield, and terminates in Manchester, Ashton, and Oldham canal, near Duckenfield-bridge. It is raised to the height of 656 feet, passing over the highest summit-level in the kingdom, and passes through the Standedge tunnel, of 5451 yards long, which is the largest in Britain. Length 19½ miles.
Itchin Navigation, Hampshire—follows the course of the Itchin from near Winchester to Southampton water, a distance of 14 miles.
Ivel River, Bedfordshire—has been made navigable for 5¾ miles, from the Ouse, up to Biggleswade.
Ivelchester and Langport Canal, Somersetshire—nearly 7 miles long, and extends from the river Parrot to Ivelchester or Ilchester.
Kennet and Avon Canal—extends from the Kennet at Newbury, Berkshire, to the Avon, below Bath, a distance of 57 miles. *The Kennet River* itself has been made navigable for 20 miles, from the entrance of the canal, downward to the Thames.
Kensington Canal, 3000 yards long—extends from the Thames northward to Kensington.
Lancaster Canal—extends from Berkhill, near Wigan, to Kirkby-Kendal. The length is about 73 miles, and it has a magnificent aqueduct over the Lune, near Lancaster.
Larke, or *Burn River*, in Suffolk and Cambridgeshire—navigable for 14 miles, to Bury St. Edmunds.
Lea River Navigation—commences at Hertford, and terminates at the Thames at Bow-creek; the length being about 26 miles.
Leeds and Liverpool Canal—extends from Leeds to Liverpool, a distance of 127½ miles. At Foulridge is a great tunnel 1640 yards long.
Leicester Navigation—14 miles long from the Loughborough canal to the *Leicester and Northamptonshire Union Canal*. The latter extends from this junction to the Grand Union canal at Gumley Bridge, a distance of 17 miles.
Leominster Canal—extends from Kingston in Herefordshire, for 46 miles to Stourport, where it joins the Severn and the Stafford and Worcester canal.
Leven Canal—a cut of 3 miles from the village of Leven to the Driffield, or Hull river navigation.
Liskeard and Looe Canal, in Cornwall—nearly 6 miles long.
Louth Canal—runs from Louth to Titney, at the mouth of the Humber, a distance of 14 miles.
Loyne, or *Lune River*—navigable about 7 miles from Lancaster Bridge to the sea.
Macclesfield Canal—extends from the Peak Forest canal, to the Trent and Mersey canal, a distance of 29½ miles.
Manchester, Bolton, and Bury Canal—extends from the Irwell at Manchester, to Bolton and Bury.
Market-Weighton Canal—extends from that town to the Humber, a distance of 11 miles.
Medway River—begins to be navigable for barges 6 miles above Tunbridge, and about 45 from Sheerness. Below Rochester Bridge the river is in some places of great width, and so deep, as to float the largest vessels at low water. A little below Rochester Bridge, it is joined by the Thames and Medway canal, and near its mouth by the East Swale, a tide-passage, along the south side of Sheppey isle.
Melton-Mowbray Navigation—Leicestershire—connects the Oakham canal with the Leicester Navigation.
Mersey and Irwell Navigation—commences in the estuary of the Mersey, at Runcorn Gap, and terminates at the bridge between Manchester and Salford. It consists of these rivers improved by locks, weirs, and side-cuts, and is navigable for upwards of 50 miles.
Monmouthshire Canal—extends from the river Usk, below Newport, to Pont-newynydd, 17¾ miles.
Montgomeryshire Canal—extends from Porty-wain limeworks, to the Severn at Newton, 27 miles.
Nary, or *Lynn River*—navigable from the Ouse at King's Lynn, to Castle Acre in Norfolk, a distance of about 15 miles.
Neath Canal, Glamorganshire—14 miles long.
Nen, or *Nyne River*—navigable from the sea below Wisbeach, to Northampton, a course of 99 miles, partly by the natural course of the river, and partly by artificial lines. It is connected with a great number of navigable cuts intersecting and crossing in all directions through the fens.
Newcastle-under-Line Canal—a short branch of the Trent and Mersey canal.
Newport-Pagnell Canal—a branch of 1½ miles long from that town to the Grand Junction canal.
North Walsham and Dilham Canal, in Norfolk—has an extent of 7 miles.
Norwich and Lowestoff Navigation—extends between these towns, a distance of 30 miles.
Nottingham Canal—has a course of 15 miles, from the Trent, Langley Bridge.
Nutbrook and Shipley Canal—is a branch of the Erewash canal, and is 4½ miles long.
Oakham Canal—extends from Oakham, in Rutlandshire, to Melton-Mowbray, a distance of 15 miles.
Ouse River, Sussex—naturally navigable for 9 miles from the sea. The navigation has been extended by artificial means, 22 miles farther, to Hammer Bridge.
Ouse River, Yorkshire—navigable for vessels of 150 or 160 tons, from its junction with the Trent, up to Armyn, a distance of 15 miles, and for smaller masted vessels, 25 miles farther up to York.
Ouse River Navigation (Bedford Level)—navigable partly by the natural channel, and partly by cuts from the sea to Bedford, a distance of 84 miles. It is connected with a great number of navigable branches in the fen districts.
Oxford Canal—extends from the Coventry canal at Longford, to the Thames at Oxford, a distance of about 91 miles.
Peak Forest Canal—commences at Duckenfield, and passes south-east, 15 miles to Bugsworth.
Pencleudd Canal, Glamorganshire—above 3½ miles long.
Pocklington Canal, Yorkshire—8½ miles long.
Portsmouth and Arundel Canal—connects these places. Length 13 miles.
Ramsden's Canal—a short connecting link of 3¾ miles long between the Huddersfield canal at Huddersfield, and the Calder and Hebble navigation, near Cooper's Bridge.
Regent's Canal—extends from the Paddington basin of the Grand Junction canal, to the Thames at Limehouse, along the north side of London, a distance of 8½ miles.
Ribble River, Lancashire—has been rendered navigable for 11 miles up from the Irish Sea.
Rochdale Canal—extends from the Bridgewater canal at Castlefield, Manchester, to the Calder navigation at Sowerby Bridge wharf, a distance of 31½ miles.
Rother River Navigation, Sussex—extends 11 miles from the sea.
Royal Military Canal—extends from Hythe to near Winchelsea, 30 miles, in Kent and Sussex.
St. Columb Canal—a cut of 6 miles, in Cornwall.
Salisbury and Southampton Canal, Hampshire—incomplete.
Sankey Brook Navigation—the oldest in England, extends 12 miles from the Mersey, to St. Helen's, Lancashire.
Severn River—navigable for 178 miles, from Welshpool to the Bristol Channel, and connected with a great number of canals.

Sheffield Canal—only 4 miles long, connects that town with the River Don navigation.
Shrewsbury Canal—extends from Rockwardine wood, at the north end of the Shropshire canal to Shrewsbury, a distance of about 17½ miles.
Shropshire Canal—extends 7½ miles from the Severn, at Coalport, to the Donnington-wood canal.
Sleaford Navigation, Lincolnshire—extends through the fens for 13½ miles.
Soar River Navigation—extends 7 miles, from the Trent to Loughborough in Leicestershire.
Somersetshire Coal Canal—a branch of the Kennet and Avon canal, has a length of 10 miles.
Staffordshire and Worcestershire Canal—extends from the Severn at Stourport, to the Trent and Mersey canal near Haywood in Staffordshire, a distance of 46½ miles.
Stainforth and Keadley Canal—extends from the river Don, near Stamforth, Yorkshire, to the Trent at Keadby, Lincolnshire, a distance of 15 miles.
Stort River—has been made navigable for 10 miles, in Hertfordshire and Essex, from the Newbridge, Bishop-Stortford, to the river Lea at Rye near Hoddesden.
Stourbridge Canal, Worcestershire—has a length of 5 miles.
Stour River, between Suffolk and Essex—has been rendered navigable for 19 miles, from Sudbury to Manningtree; below which to Harwich it is a wide estuary.
Stratford-upon-Avon Canal—extends from King's-Norton, near Birmingham, to Stratford, a distance of 23½ miles.
Stroudwater Navigation, Gloucestershire—8 miles long.
Swansea Canal, Glamorganshire—extends inland from Swansea harbour for 17 miles.
Tamer Manure Navigation. The Tamer river has been made navigable up to Boat-pool, whence a canal has been continued for about 22 miles, to Tamerton Bridge.
Tavistock Canal—extends from the tideway of the Tamer, 4½ miles, to Tavistock.
Tees Navigation,—partly natural, partly artificial, extends inland about 12 miles from the sea.
Thames River—begins to be navigable at Lechlade, about 146½ miles above London Bridge, and where the Thames and Severn canal locks into it. From London downwards, it is navigable for large ships, and, gradually widening, at Sheerness it becomes a large estuary 5 miles broad. From the great depth of water in the Thames, London enjoys, as a shipping port, peculiar advantages. Even at ebb-tide, there is 12 or 13 feet of water in the fair-way of the river above Greenwich; and the mean range of the tides at London Bridge is about 17 feet, while the range of the highest spring-tides is about 22. Up to Woolwich, the river is navigable for ships of any burden; to Blackwall for those of 1400 tons; and to St. Catherine's docks for vessels of 800 tons; but, owing to the numerous, and sometimes opposite directions which the river takes, the change of its currents, according to the state of the tide, and the varying shoals which exist in many parts of it, the navigation is intricate and difficult. It is accordingly superintended by a distinct class of people, called the river pilots, who conduct vessels to and from Gravesend, below which they are intrusted to the sea pilots. The estuary of the Thames is very much incommoded by sandbanks, among which are a number of channels passable by ships, and marked out by buoys and lights.
Thames and Medway Canal—extends 7½ miles from Gravesend to Chatham. It passes through a tunnel of 2½ miles.
Thames and Severn Canal—extends from Lechlade on the Thames, to the Stroudwater canal near Stroud, a distance of 30 miles. It has a tunnel at Sapperton, which is 4300 yards long.
Tone and Parret Navigation, Somersetshire—about 27 miles long, commencing at Start Point, on the Bristol Channel.
Trent River—navigable from Burton to the Humber, a distance of about 117 miles.
Trent and Mersey Canal, sometimes called *The Grand Trunk Canal*, from it passing through the central parts of the kingdom, and connecting the Trent, Mersey, and Severn—extends from Wilden Ferry, on the Trent, to Preston brook, on the Duke of Bridgewater's canal. The length is about 93 miles. At Harecastle, Staffordshire, it passes through a tunnel of 2880 yards.
Tyne River, Northumberland, becomes navigable at Newburn, 5 miles above Newcastle; and ships of 400 tons burden come up to the bridge of that town. From Newburn to the lighthouse at Shields, the distance is 17 miles. At its mouth, the river forms one of the most convenient tidal harbours in the world, affording ample accommodation for 2000 sail.
Ulverston Ship-canal, Lancashire—about 1½ mile long.
Ure River Navigation, or *Ripon Canal*—extends from the Ouze to Ripon. Length about 7½ miles.
Warwick and Birmingham Canal—connects these towns, and has a course of 22½ miles.
Warwick and Napton Canal—extends 14 miles.
Waveney River, between Suffolk and Norfolk—is navigable for about 23 miles from the sea, to Bungay.
Wear River—navigable from the sea to Durham, a distance of about 18 miles.
Weaver River Navigation, Lancashire—extends 23½ miles.
Welland River—has been made navigable from its mouth, up to Stamford, Lincolnshire.
Wey River—has been made navigable from the Thames to Godalming, Surrey, about 20½ miles.
Wey and Arun Junction Canal—extends from the Wey, near Shalford powder-mills, to Newbridge, on the Arun navigation at Newbridge, a distance of 18 miles.
Wilts and Berks Canal—extends 52 miles from Semington, on the Kennet and Avon canal, to the Thames at Abingdon, with several branches to other places.
Wisbeach Canal—a level cut of 6 miles from the river Nen at Wisbeach, to the old river at Outwell.
Witham River—navigable from its mouth, to the Foss Dyke at Lincoln, a distance of 38 miles.
Worcester and Birmingham Canal—extends from Birmingham to the Severn, a little below Worcester. The length is 29 miles.
Wreak and Eye Rivers, or *Leicester and Melton-Mowbray Navigation*—extends along these rivers about 11 miles—(see *Melton-Mowbray Navigation.*)
Wye and Lugg Rivers—navigable 99½ miles from the Severn.
Wyrley and Essington Canal—extends from the Birmingham canal near Wolverhampton, to the Coventry canal near Huddersford, a distance of 24 miles.
Yare River—navigable from Norwich to Yarmouth, by a crooked course of 28 miles.

§ 3. *Railways.*

Railways, it is believed, were first introduced into Britain in the beginning of the seventeenth century, when, under the name of *tram-roads*, they were used at some of the Newcastle collieries. For a long period these modes of communication remained more or less rude in point of construction, and limited as to application, but of late years they have presented the most perfect specimens of engineering skill, and have been established on a most gigantic scale of magnitude. The Surrey Iron Railway, to authorize the construction of which an Act of Parliament was obtained in 1801, may be considered the earliest of the public railways of Britain. It was immediately succeeded by several others; yet for an after period of more than twenty

years, undertakings of that nature took little hold of public attention, till the splendid success which attended the introduction of locomotive steam-engines on the Stockton and Darlington, and Liverpool and Manchester lines, brought them under general notice.* The progress of public railways throughout the United Kingdom, since the commencement of the present century, will be seen from the following statement of the number of Railway Acts passed by the Imperial Parliament to 1838:—

1801.....1	1812.....2	1823..... 1	1831..... 9
1802.....2	1814.....1	1824..... 2	1832..... 8
1803.....1	1815.....1	1825..... 5	1833.....11
1804.....1	1816.....1	1826..... 6	1834.....14
1808.....1	1817.....1	1827..... 6	1835.....18
1809.....2	1818.....11	1828.....11	1836.....35
1810.....1	1819.....1	1829..... 9	1837.....14
1811.....3	1821.....1	1830..... 8	1838.....16

Between the 1st January 1826, and the commencement of the present year, there were passed 165 Acts relative to Railway Companies, authorizing the latter to raise, in subscribed capital, and by loans, an aggregate sum exceeding £57,000,000.† The following is a list of the principal lines of public railways in England and Wales, finished and in operation, in August 1839:—

	Capital.		*Capital.*
London and Birmingham,	£4,500,000	North Union,	£480,000
Grand Junction,	1,906,000	Leeds and Selby,	340,000
Liverpool and Manchester,	1,465,000	St. Helen's and Runcorn-Gap,	220,000
Newcastle and Carlisle,	750,000	Leicester and Swannington,	176,000
London and Greenwich,	733,333	Stockton and Darlington,	100,000
London and Croydon,	575,000		

The following lines, at the above-mentioned date, were in progress, and in several instances partially in operation:—

	Capital.		*Capital.*
Great Western,	£3,333,333	Commercial (Blackwall),	£800,000
Manchester and Birmingham,	2,800,000	Sheffield and Manchester,	706,000
London and Brighton,	2,400,000	Thames Haven,	600,000
Eastern Counties,	2,133,333	Hull and Selby,	533,333
North Midland,	2,000,000	Bolton and Preston,	506,500
Bristol and Exeter,	2,000,000	York and North-Midland,	493,333
London and Southampton,	1,860,000	Chester and Crewe,	333,333
South-Eastern and Dover,	1,850,000	Chester and Birkenhead,	320,333
Manchester and Leeds,	1,733,000	Gosport Junction,	300,000
Northern and Eastern,	1,600,000	Llanelly Railway and Dock Company,	270,000
Midland Counties,	1,333,000	Maryport and Carlisle,	240,000
Birmingham and Gloucester,	1,266,666	Birmingham, Bristol, and Thames Junction,	200,000
Great North of England,	1,150,000	Preston and Wyre,	170,000
Cheltenham and Great Western Union,	1,000,000		
Birmingham and Derby Junction,	830,000		

The following table contains the names of all the English railways executed or authorized by Parliament, to the end of 1838. Many new lines have since been proposed, but at present (August 1839) the shares of only two of these, viz. the *Harwich Railway*, and the *Manchester and Birmingham Extension Railway*, have as yet found their way into the market.

Birmingham and Derby Junction Railway—extends 38¾ miles, by Tamworth, Burton, Willington, and Normanton.
Birmingham and Gloucester Railway—51½ miles.
Birmingham, Bristol, and Thames Junction Railway, Middlesex—is to commence at the basin of the Paddington canal, and to join the London and Birmingham and Great Western railways at or near Holden's Green. Length about 3 miles.
Bolton and Leigh Railway, Lancashire—length 10 miles.
Bolton and Preston Railway, Lancashire—length 14¼ miles.
Brandling Junction Railway—extends from Gateshead to Monkwearmouth, Durham.
Bridgend Railway, Glamorgan—length 4¼ miles.
Bristol and Exeter Railway—is to connect these two cities with Axemouth, Bridgewater, and Taunton. Length 76 miles.
Bristol and Gloucestershire Railway—extends 9 miles north of Bristol.
Bull's Pit or Forest of Dean Railway, Gloucestershire—stretches from the Severn to the forest of Dean. Length 7¾ miles.
Caermarthenshire Railway—runs 16 miles northward from Llanelly.
Canterbury and Whitstable Railway, Kent—connects these towns, which are distant from each other 6¼ miles.
Cheltenham and Great Western Union Railway—from Cheltenham and Gloucester is to join the Great Western railway near Swindon, and to have a branch to Cirencester.
Chester and Birkenhead, and *Chester and Crewe Railways*, Cheshire. Together 35¼ miles in length.
Clarence Railway, Durham—a branch of the Stockton and Darlington railway, 15¼ miles long. It has six branches, extending collectively 30 miles.
Clarence and Hartlepool Railway, Durham—length 9 miles.

* Mr. Trevithick's locomotive steam-engine, used in 1804 on the Merthyr Tydvil railway, is the earliest instance of the successful application of steam-power to railway purposes.

† Capital in Joint-Stock, ...£41,610,814
Power to raise by Loan, ... 16,177,630
Total, ...£57,788,444

Commercial (Blackwall) Railway, Middlesex — extends from the Minories to Blackwall.
Cromford and High Peak Railway, Derbyshire — length 32¼ miles.
Croydon, Merstham, and Godston Railway — extends from Croydon to Reigate in Surrey. Length 18½ miles.
Duffryn-Llynvi and Port Caul Railway, Glamorgan — length 16¾ miles.
Dulais Railway, Glamorgan — length 8¾ miles.
Durham Junction Railway — a branch of the Stanhope and Tyne railway.
Durham and Hartlepool Railway — connects these towns.
Eastern Counties Railway — is to extend from London to Norwich and Yarmouth, by Romford, Chelmsford, Colchester, and Ipswich.
Gloucester and Cheltenham Railway — length 9 miles.
Gosport Junction Railway — Southamptonshire.
Grand Junction Railway — extends from Birmingham to Newton in Lancashire, where it joins the Liverpool and Manchester line. Length 82½ miles.
Great North of England Railway — is to extend from the city of York to Newcastle-upon-Tyne. Length 74¼ miles.
Great Western Railway — extends from Paddington (London), by or near to Maidenhead, and by Reading, Wallingford, and Wantage, to Bath and Bristol. Length 117¼ miles.
Grosmont Railway — a branch of the Llanfihangel railway, Monmouthshire, seven miles long.
Hay Railway, Brecknockshire, 24 miles long.
Heck and Wentbridge Railway, Yorkshire, West Riding — length 7¾ miles.
Hull and Selby Railway, Yorkshire — length 31¼ miles.
Lancaster and Preston Railway — length 20¼ miles.
Leeds and Selby Railway, Yorkshire — length 20 miles.
Leicester and Swannington Railway, Leicestershire — length 16 miles.
Liverpool and Manchester Railway — connects these two towns. Length 30¼ miles.
Llanelly Railway, Glamorganshire.
Llanfihangel Railway, Monmouthshire — length 6¾ miles.
London and Birmingham Railway. — From its London terminus at Euston Grove in the New Road, this celebrated line proceeds to Birmingham by Watford, Berkhampstead, Tring, Leighton-buzzard, Wolverton, and Blisworth, near Northampton and Daventry, and by Rugby and Coventry. Length 112 miles.
London and Brighton Railway. — Setting out from London, this line proceeds to Brighton by Croydon, Merstham, Crawley, and Cuckfield. Length 58¼ miles.
London and Croydon Railway. Length 9 miles.
London and Greenwich Railway — 4 miles in length, extends from London Bridge to Greenwich, and is carried over the streets and houses by a long series of arches.
London and Southampton Railway — proceeds to its Southampton terminus by Basingstoke and Winchester. Length 76¾ miles; with branch to Gosport of 16 miles.
Mamlihead Railway, Monmouthshire — length 5 miles.
Manchester and Birmingham Railway — length 45½ miles, and including branches, 72¼ miles.
Manchester and Leeds Railway — proceeds to the latter town by Rochdale, Halifax, Dewsbury and Wakefield. Length 50 miles.
Manchester, Bolton, and Bury Railway — extends from Salford to Bolton. Length 10 miles.
Mansfield and Pinxton Railway, Nottinghamshire and Derbyshire — length 8¼ miles.
Maryport and Carlisle Railway, Cumberland — length 28 miles.
Midland Counties Railway — extends from the London and Birmingham Railway at Rugby, by Leicester and Loughborough, to Nottingham and Derby. Length 56¼ miles.
Monmouth Railway, Monmouthshire.
Nanttle Railway, Caernarvonshire — extends from Nanttlepool to Caernarvon.
Newcastle and Carlisle Railway — length 62 miles.
Newcastle and North Shields Railway. Length 7 miles.
North Midland, or Leeds and Derby Railway — proceeds to the latter town by Rotherham, Chesterfield, and Belper, 72¼ miles.
North Union Railway — extends from the Liverpool and Manchester railway to Preston in Lancashire. Length 22 miles.
Northern and Eastern Railway — is to extend in the first instance from London to Cambridge, with a view of extension hereafter into the eastern and northern counties.
Oystermouth Railway — extends from Swansea to Oystermouth, Glamorganshire. Length about 6 miles.
Penrhynmawr Railway, Anglesea — length 7 miles.
Plymouth and Dartmoor Railway, Devon — length 30 miles.
Portland Railway, Portland Island — length 2 miles.
Preston and Wyre Railway, Lancashire — length 19½ miles.
Redruth and Chasewater Railway, Cornwall — length 9¼ miles, with 5 miles of branches.
Rumney Railway, Monmouthshire — length 21¾ miles.
Saint Helen's and Runcorn Gap Railway, Lancashire — connects the collieries in the neighbourhood of St. Helen's with the river Mersey.
Severn and Wye Railway, Gloucestershire — length 26 miles.
Sheffield and Manchester Railway — length 40¾ miles.
Sheffield and Rotherham Railway — length 4¾ miles.
Sirhowey Tramroad, Monmouthshire — length 11 miles.
South-Eastern and Dover Railway — is to stretch from the London and Croydon Railway to Dover.
Stanhope and Tynemouth Railway, Durham.
Stockton and Darlington Railway, Durham — length 25½ miles, and including branches about 40 miles.
Stockton and Hartlepool Railway, Durham — length 8¾ miles.
Stratford and Moreton Railway, Warwickshire, Gloucestershire, and Worcestershire — length 16 miles.
Surrey Railway — extends from Wandsworth to Croydon. Length 9 miles.
Thames Haven Railway, Essex — is to extend from or near Romford to a tide-dock at Shell-Haven.
Warrington and Newton Railway, Lancashire — length 4¼ miles.
York and North Midland Railway, Yorkshire, W. R. — is to extend from York to the township of Altofts (north-east of Wakefield.) Length 23 miles.

ADMINISTRATIVE AND ANCIENT DIVISIONS. — England is divided into forty, and Wales into twelve *shires* or *counties*, fifty-one of which are distributed or arranged into seven *circuits*; so named, as each of the seven included districts is visited periodically by two of the supreme judges, for the purpose of trying both civil and criminal causes at the assizes. As indicated in the following table, most of the counties are divided into *hundreds*; but the division of Northumberland, Cumberland,

Westmoreland, Durham, and Lancashire, is into *wards*. Yorkshire is divided into three *ridings*, which are subdivided into *wapentakes*. The divisions of Kent are termed *lathes*, and those of Sussex *rapes*, both of these being subdivided into *hundreds*. These divisions and subdivisions are further divided into *parishes*, of which there are 8,511 in England, and 869 in Wales. As Middlesex is the seat of the supreme courts, it is not included in any of the circuits.

HOME CIRCUIT.

Counties. — *Hundreds, Wards, Wapentakes, &c.*

ESSEX. — Barstable, Becontree, Chafford, Chelmsford, Clavering, Dengie, Dunmow, Freshwell, Harlow, Hinkford, Lexden, Ongar, Rochford, Tendring, Hurstable, Uttlesford, Waltham, Winstree, Witham, and Havering liberty. *Parishes*, 405.

HERTFORD. — Braughin, Broadwater, Cashio, Dacorum, Edwinstree, Hertford, Hitchin and Pirton, Odsey. *Parishes*, 135.

KENT. — 1. *Sutton-at-hone lathe* contains the hundreds of Axton Dartford and Wilmington, Blackheath, Bromley and Beckenham, Ruxsley, Codsheath, Somerden, Westerham, and Lessness. 2. *Aylesford lathe* — Toltingtrough, Shamwell, Hoo, Rochester city, Chatham and Gillingham, Wrotham, Larksfield, Maidstone, Eyehorne, Littlefield, Twyford, Washlingstone, Brenchly and Horsemonden, Tunbridge. 3. *Scray lathe* — Milton, Teynham, Faversham, Boughton-underblean, Felborough, Calehill, Wye, Chart and Longbridge, Blackbourne, Tenterden, Barkley, Cranbrook, Marden, East Barnfield, Rolvenden, Selbrightenden, Barony of Bircholt, and Isle of Sheppey. 4. *St. Augustine lathe* — Whitstable, Blean Gate, Ringslaw or Isle of Thanet, Wingham, Preston, Downhamford, Westgate, Bridge and Petham, Kinghamford, Eastry, Cornilo, Bewsborough. 5. *Shepway lathe* — Stouting, Loningborough, Folkstone, Hayne, Hythe, Street, Newchurch, Ham, Aloesbridge, Worth, St. Martin Pountney, Langport, Oxney isle, and Franchise of Bircholt. *Parishes*, 414.

SURREY. — Brixton, Wallington, Kingston, Elmbridge, Godley, Woking, Effingham, Copthorne, Tandridge, Reigate, Wotton, Blackheath, Godalming, Farnham. *Parishes*, 140.

SUSSEX. — 1. *Chichester rape* — Dumpford, Eastbourne, Westbourne and Singleton, Bosham, Manhood, Box and Stockbridge, Aldwick. 2. *Arundel rape* — Rotherbridge, West Easwrith, Bury, Arundel, Avisford, Poling. 3. *Bramber rape* — Singlecross, Horsham borough, West Grinstead, Windham and Ewhurst, East Easwrith, Tipnook, Steyning, Burbeach, Fishergate, Brightford, Tarring, Patching. 4. *Lewes rape* — Buttinghill, Street, Barcomb, Poynings, Fishergate, Preston, Whalesbone, Dean, Younsmere, Swanborough, Lewes, Holmstrow. 5. *Pevensey rape* — East Grinstead, Hartfield, Rotherfield, Loxfield-Pelham, Burley Arches, Rushmonden, Loxfield-Dorset; Ringmer, Shiplake, Dill, Totmore, Danehill-Horsted, Aleistone, Bishopstone, Flexborough, Longbridge, Lowey of Pevensey, Willingden, Eastbourne. 6. *Hastings rape* — Shoyswell, Henhurst, Hawkesborough, Netherfield, Foxearle, Ninfield, Boxhill, Battle, Baldstow, Guestling, Gostrow, Staple, Goldspur, and the *cinque ports* of Hastings, Winchelsea, and Rye. *Parishes*, 342.

NORFOLK CIRCUIT.

BUCKINGHAM. — Amersham, Ashendon, Aylesbury, Buckingham, Cottesloe, Desborough, Newport, Stoke. *Parishes and Parochial Chapelries*, 207.

BEDFORD. — Barford, Biggleswade, Clifton, Flitt, Marshead, Redbornstoke, Stodden, Willey, Wixamtree. *Parishes*, 124.

HUNTINGDON. — Hurstingstone, Leightonstone, Normancross, Toseland.

CAMBRIDGE. — Wisbeach, Whittlesea and Thorney, Witchford, Ely, Papworth, North Stow, Chesterton, Staine, Staploe, Cheveley, Radfield, Flendish, Longstow, Wetherley, Armingford, Thriplow, Whittlesford, Chilford, and Cambridge liberty. *Parishes*, 164.

NORFOLK. — Smithdon, Brothercross, North-Greenhoe, Holt, North Erpingham, Happing, Tunstead, South Erpingham, Eynesford, Launditch, Gallow, Freebridge-Lynn, Freebridge-Marshland, Clackclose, South Greenhoe, Mitford, Forehoe, Taverham, E. and W. Flegg, Walsham, Clavering, Loddon, Blofield, Henstead, Humbleyard, Depwade, Wayland, Grimshoe, Shropham, Guiltcross, Diss, Earsham, and Norwich liberty. *Parishes*. 660.

SUFFOLK. — Samford, Bosmere and Claydon, Cosford, Babergh, Risbridge, Thingoe, Lackford, Blackford, Thedwestry, Hartesmere, Stow, Thredling, Loes, Carlford, Colnies, Wilford, Flomesgate, Hoxne, Blything, Wangford, Lothingland and Mutford. *Parishes*, 575.

OXFORD CIRCUIT.

OXFORD. — Banbury, Bloxham, Chadlington, Bampton, Wootton, Ploughley, Bullington, Dorchester, Thame, Lewknor, Ewelme, Langtree, Binfield, Pirton. *Parishes*, 280.

BERKSHIRE. — Shrivenham, Faringdon, Garfield, Ock, Homer, Moreton, Reading, Compton, Wantage, Kintbury-Eagle, Lambourn, Faircross, Moreton, Theale, Sonning, Charlton, Ripplesmere, Wargrave, Cookham, Beynhurst, Bray. *Parishes*, 147.

GLOUCESTER. — Dudston and Kingsbarton, Botloe, Westminster, Cheltenham, Cleeve, Tewkesbury, Tibaldstone, Kiftsgate, Deerhurst, Slaughter, Brightwells-barrow, Bradley, Crowthorne and Minety, Rapsgate, Bisley, Whitstone, Westbury, St. Briavells, Blidesloe, Berkeley, Longtree, Grumbald's-ash, Thornbury, Henbury, Langeley and Swinehead, Barton-regis, Puklechurch, and part of the duchy of Lancaster. *Parishes*, 320.

WORCESTER. — Doddingtree, Halfshire. Oswaldslow, Pershore, Blackenhurst. *Parishes*, 167.

MONMOUTH. — Abergavenny, Skenfreth, Ragland, Caldicott, Usk, Wentlloog. *Parishes*, 127.

HEREFORD — Wigmore, Wolphy, Broxash, Stretford, Huntington, Grimsworth, Radlow, Graytree, Wormelow, Webtree, Ewyas-Lacy. *Parishes*, 176.

SHROPSHIRE or **SALOP.** — N. and S. Bradford, Brimstree, Chirbury, Condover, Ford, Munslow, Oswestry, Overs, Pimhill, Purslow, Stottesden; the boroughs of Bridgenorth, Ludlow, Shrewsbury; and the town and liberty of Wenlock. *Parishes*, 230.

STAFFORD. — Totmonslow, Pirehill, Cuttlestone, Offlow and Seisdon. *Parishes*, 176.

MIDLAND CIRCUIT.

LINCOLN. — 1. *Lindsey* — Yarborough, Manley, Corringham, Aslacoe, Walshcroft, Bradley and Haverstoe, Ludborough, South Eske, Calceworth, Hill, Bolingbroke, Candleshoe, Horncastle, Gartrec, Wraggoe, Lawress, Well, and Lincoln liberty. 2. *Kesteven* — Boothby-Graffo, Langoe, Flaxwell, Aswardhurn, Loveden, Winnibriggs and Threo, Grantham-Soke, Beltisloe, Ness, Aveland, 3. *Holland* — Skirbeck, Kirton, Elloe. *Parishes*, 630.

RUTLAND. — Alstoe, East, Martinsley, Oakham-Soke, Wrandike. *Parishes*, 50.

NORTHAMPTON. — Chipping-warden, Cleley, Corby, Fawsley, Guilsorqough, Greensnorton, Hamford-shoe, Higham-Ferrers, Huxloe, Kings-Sutton, Navisford, Nobottle-Grove, Orlingbury, Polebrook, Rothwell, Spellhoe, Towcester, Willybrook, Wymersley, and Peterborough liberty. *Parishes*, 326.

MIDLAND CIRCUIT—*continued.*

Counties. *Hundreds, Wards, Wapentakes, &c.*

LEICESTER.—Framland, Gartree, East and West Goscote, Guthlaxton, Sparkenhoe, and Borough of Leicester. *Parishes*, 200.

DERBY.—High Peak, Scarsdale, Wirksworth, Appletree, Morleston and Litchurch, Repton and Gresley. *Parishes*, 116.

NOTTINGHAM.—Bassetlaw, Thurgarton, Newark, Broxtow, Bingham, Rushcliffe, liberties of Nottingham, and Southwell, and Scrooby. *Parishes*, 168.

WARWICK.—Hemlingford, Knightlow, Barlichway, Kington, and county of the city of Coventry. *Parishes* (entire), 201.

WESTERN CIRCUIT.

SOUTHAMPTON, HAMPSHIRE, or HANTS.—1. *Andover division*—Andover, Wherwell, Thorngate, King's Sombourn, Barton-Stacey. 2. *Kingsclere division*—Chutely, Evingar, Kingsclere, Overton, Pastrow. 3. *Basingstoke division*—Basingstoke, Bermond's-pit, Crondall, Holdshott, Odiham, Mitcheldever. 4. *Alton division*—Alton, Bishop's Sutton, Selborne, East Meon, Finchdean, Alresford new liberty. 5. *Fawley division*—Bountisborough, Buddlesgate, Fawley, Mainsborough, Mansbridge. 6. *Portsdown division*—Bosemere, Fareham, Hambledon, Meon Stoke, Portsdown, Titchfield, part of Bishop's Waltham, and liberties of Alverstoke, and Gosport, and Havant. 7. *New Forest East division*—New Forest, Redbridge, Ringwood, part of Bishop's Waltham, and liberties of Beaulieu, Dibdin, and Lymington. 8. *New Forest West division*—Christchurch, Fordingbridge, Ringwood, liberties of Breamore, Westover, city of Winchester and Stoke liberty, Borough of Portsmouth, Town and county of Southampton. 9. *Isle of Wight*—East Medina liberty, West Medina liberty. *Parishes*, 253.

WILTSHIRE, or WILTS.—Malmesbury, Chippenham, Bradford, Melksham, Calne, Posterne and Cannings, Highworth, Cricklade, and Staple, King's-bridge, Elstub, and Everley, North Damerham, Ramsbury, Selkley, Kinwardstone, Whorwelsdown, Westbury, Swanborough, South Damerham, Warminster, Heytesbury, Amesbury, Mere, Downton, Chalk, Dunworth, Branch and Dole, Cawdan and Cadworth, Underditch, Alderbury and Frustfield. *Parishes*, 295.

DORSET.—Coombeditch, Pimperne, Rushmore, Corfecastle, Bere-regis, Hundredsbarrow, Hasilor, Rowbarrow, Winfrith, Beaminster, Forum and Redhone, Eggerton, Godderthorne, Whitchurch-Canonicorum, Buckland-Newton, Corne Totcombe and Modbury, Whiteway, Culliford Tree, St. George, Piddletown, Tollerford, Uggescomb, Bradbury, Cogdean, Cranborne, Knowlton, Loosebarrow, Monkton up Wimborne, Sixpenny-Handley, Wimborne St. Giles, Sherborne, Yetminster, Brownshall, Redlane, Sturminster-Newton-Castle, and the liberties of Dewlish, Bindon, Ower-Moigne, Stoborough Broad-Windsor, Frampton, Loders and Brotherampton, Poorstock, Alton-Pancras, Piddletrenthide, Sydling-St. Nicholas, Fordington, Portland isle, Piddlehinton, Sutton-Points, Wayhouse, Wyke-regis and Eltwall, Alcester, Gillingham, Halstock, Ryme-Intrinseca, and Stower-Provost. *Parishes*, 250.

SOMERSET.—Portbury, Hardcliffe and Bedminster, Chew, Keynsham, Bath-Forum, Wellow, Kilmersdon, Chewton, Brent and Wrigton, Winterstoke, Bempstone, Wells-Forum, Whitestone, Frome, Bruton, Ferris-Norton, Horethorne, Catsash, Somerton, Whitley, Glaston twelve hides, Huntspill and Puriton, North and South Petherton, North Curry, Abdick and Bulstone, Martock, Tintinhull, Stone, Houndsborough, Berwick and Coker, Crewkerne, East and West Kingsbury, Taunton and Taunton dean, Andersfield, Pitney, Milverton, Cannington, Williton and Freemanners, Carhampton, and the liberties of Hampton and Claverton, Mells and Leigh, Witham-Friary. *Parishes*, 469.

DEVON.—Braunton, Skerwill, South Molton, Fremington, Shebbear, Hartland, Black Torrington, Winkley, with North Tawton, Crediton, East and West Bridleigh, Witheridge, Bampton, Tiverton, Halberton, Hemyock, Axminster, Colyton, Ottery-St. Mary, Cliston, Hayridge, Lifton, Tavistock, Roborough, Plympton, Ermington, Stanborough, Coleridge, Haytor, Teignbridge, Exminster, Wonford. *Parishes*, 430.

CORNWALL.—Stratton, Lesnewth, East, West, Trig, Pyden, Powder, Kerrier, Penwith. *Parishes*, 208.

NORTHERN CIRCUIT.

YORK.—1. *North riding*—E. and W. Gilling, Hang, E. and W., Hallikeld, Bulmer, Ryedale, Birdforth, Allertonshire, Langbaurgh, Whitby-Strand, Pickering-Lythe, Ainsty, or liberty of York, and liberty of St. Peter. 2. *East Riding*—Dickering, Buckrose, Holderness, Harthill, Howdenshire, Ouse and Derwent. 3. *West Riding*—Staincliffe and Ewcross, Claro, Skyrack, Barkston Ash, Morley, Staincross, Osgoldcross, Strafforth and Tickhill, Agbrigg. *Parishes*, 604.

DURHAM.—Darlington, Chester, Easington, Stockton; and in *North Durham*, Norhamshire and Islandshire. *Parishes*, 120.

NORTHUMBERLAND.—Glendale, Bamborough, Coquetdale, Morpeth, Castle, and Tindale or Tynedale.—*Parishes*, 460.

CUMBERLAND.—Eskdale, Cumberland, Allerdale below Derwent, Allerdale above Derwent, Leath. *Parishes*, 104.

WESTMORELAND.—East Ward, West Ward, Kendal and Lonsdale. *Parishes*, 32.

LANCASHIRE.—Lonsdale, Amounderness, Blackburn, Leyland, Salford, West Derby. *Parishes*, 65.

CHESTER AND WALES CIRCUIT.

CHESHIRE.—Wirral, Broxton, Edisbury, Bucklow, Macclesfield, Northwich, Nantwich. *Parishes*, 86.

ANGLESEA.—Llyfon, Maltreath, Menai, Talybolion, Twrcelyor, and Tyndethway. *Parishes*, 73.

BRECKNOCK.—Builth, Crickhowel, Defynoc, Merthyr, Penkelly, and Talganth. *Parishes*, 61.

CARDIGAN.—Geneur-Glyn, Upper Har, Lower Har, Moldyn, Pennarth, Troedyraur. *Parishes*, 58.

CARMARTHEN.—Carnwallon, Cathlnog, Cayo, Derlys, Elvet, Iskennan, Kidwelly, Perfedd. *Par.* 87.

CAERNARVON.—Commitmaen, Creudyn, Dinnlaen, Evionydd, Gafflogian, Isaf, Is-Gorfal, Nant-Conway, Uchaff, Uwch-Gorfal, and Bangor city. *Parishes*, 71.

DENBIGH.—Bromfield, Chirk, Isaled, Isdulas, Ruthin, and Yale. *Parishes*, 50.

FLINT.—Coleshill, Maclor, Mold, Prestatyn, and Rhuddlan. *Parishes*, 28.

GLAMORGAN.—Caerphilly, Lowbridge, Dinas-powis, Kibber, Dangwolach, Miskin, Neath, Newcastle, Agmore. *Parishes*, 118.

MERIONETH.—Ardudwy, Eidernion, Estimaner, Pennllynn, Tal-y-bount, and Mouddwy. *Parishes*, 37.

MONTGOMERY.—Langfyllyn, Dewddwr, Pool, Caurs, Mathrafal, Machynlleth, Llanidloes, Montgomery, and Newtown. *Parishes*, 47.

PEMBROKE.—Castlemartin, Dewisland, Daughleddau, Cemaes, Cilgerran, Narberth, and Rôs or Rhôs. *Parishes*, 145.

RADNOR.—Colwyn, Cofnlys, Knighton, Painscastle, Radnor, and Rhayadyr. *Parishes*, 52.

MIDDLESEX.

Spelthorne, Isleworth, Elthorne, Gore, Edmondton, and Ossulston. *Parishes* (exclusive of city parishes), 75.

The *Ancient* and the *Saxon Divisions* of England and Wales are stated in the following tables: —

Ancient Divisions.	*Included Modern Counties.*	*Chief Towns.*
DAMNONII,	Cornwall and Devon,	*Isca Dumnoniorum* (Exeter.)
DUROTRIGES,	Dorset,	*Durnovaria* (Dorchester.)
BELGÆ,	Somerset, Wilts, the northern portion of Hants, and the Isle of Wight,*	*Aquæ Solis* (Bath); *Venta Belgarum* (Winchester.)
ATREBATII,	Berks,	*Galleva* (Wallingford??)
REGNI,	Surrey, Sussex, and the southern portion of Hants,	*Naviomagus* (Croydon?)
CANTII,	Kent,	*Durovernum* (Canterbury.)
TRINOBANTES,	Middlesex and Essex,	*Londinum* (London.)
ICENI,	Suffolk, Norfolk, Cambridge, and Huntingdon,	*Venta Icenorum* (Norwich.)
CATIEUCHLANI,	Bucks, Hertford, and Bedford,	*Verulamium* (Verulam, near St. Albans.)
DOBUNI,	Gloucester and Oxford,	*Glevum* (Gloucester.)
SILURES,	Hereford, Monmouth, Radnor, Brecon, and Glamorgan,	*Isca Silurum* (Caerleon.)
DIMETÆ,	Caermarthen, Pembroke, and Cardigan,	*Maridunum* (Caermarthen.)
ORDOVICES,	Flint, Denbigh, Merioneth, Montgomery, Caernarvon, and the Isle of Anglesea,	*Segontium* (near Caernarvon.)
CORNAVII,	Chester, Salop, Stafford, Warwick, and Worcester,	*Deva* (Chester.)
CORITANI,	Lincoln, Nottingham, Derby, Leicester, Rutland, and Northampton,	*Lindum* (Lincoln.)
BRIGANTES,	York, Lancaster, Westmoreland, Cumberland, and Durham,	*Eboracum* (York.)
OTTADINI,	Northumberland,	*Axelodunum* (Hexham.)

Under the Romans, England and Wales were divided into the following five provinces, but the exact boundaries of these are not known: — *Britannia Prima*, comprehending the south of England; *Britannia Secunda*, Wales; *Maxima Cæsariensis* and *Valencia*, the northern counties, and *Flavia Cæsariensis*, the midland counties of England.

Table of the Kingdoms erected by the Saxons, or the Saxon Heptarchy.

Kingdoms.	*Counties, &c.*	*Chief Towns.*
KENT,	Kent,	Canterbury.
SOUTH-SAXONS,	Sussex and Surrey,	Chichester and Southwark.
WEST-SAXONS,	Cornwall, Devon, Dorset, Somerset, Wilts, Hants, and Berks,	Launceston, Exeter, Dorchester, Bath, Salisbury, Winchester, and Abingdon.
EAST-SAXONS,	Essex, Middlesex, and a portion of Hertford,	London.
EAST-ANGLES,	Norfolk, Suffolk, Cambridge, and the Isle of Ely,	Norwich, Bury St. Edmunds, Cambridge, and Ely.
MERCIA,	Gloucester, Hereford, Worcester, Warwick, Leicester, Rutland, Northampton, Lincoln, Huntingdon, Bedford, Bucks, Oxford, Stafford, Derby, Salop, Nottingham, Chester, and part of Hertford.	Gloucester, Hereford, Worcester, Warwick, Leicester, Oakham, Northampton, Lincoln, Huntingdon, Bedford, Aylesbury, Oxford, Stafford, Derby, Shrewsbury, Nottingham, Chester, and Hertford,
NORTHUMBERLAND,	Lancaster, York, Durham, Cumberland, Westmoreland, Northumberland, and Scotland as far as the Firth of Forth,	Lancaster, York, Durham, Carlisle, Appleby, and Newcastle.

TOPOGRAPHY. — The details under this head shall commence with an account of the Metropolis, and be followed up by notices of cities, towns, and other places in the several counties, the latter being arranged in alphabetical order.

§ 1. *The Metropolis.*

LONDON, the capital of England, and the metropolis of the British empire, is situate in the counties of Middlesex and Surrey, on the banks of the Thames, about 60 miles from the sea. For purposes of criminal judicature, portions of the counties of Essex and Kent are also included within the municipal limits. The larger portion of the city is built on the north side of the river, upon a gravelly clay soil, which rises with a very gentle slope from the water's edge; the southern portion stands upon a dead flat, very little raised above the level of the stream. The outline of the city is extremely irregular, and it is therefore difficult to determine its precise extent. It is usually said to include all the buildings comprised within a circle of 4 miles radius round St. Paul's, which will give it a circumference of 24 miles. The area actually covered with buildings and streets, together with the surface of the Thames, cannot be less than from 19 to 20 square miles. It is to be borne in mind, however, that London is not merely one city, but that, exclusive of the many scattered groups of villages and houses lying on its outskirts, it consists of eight distinct cities and boroughs, viz. the *city of London within and without the walls*; the *city of West-*

* Arrowsmith includes the Isle of Wight in the territory of the Regni.

minster; the boroughs of *Mary-le-Bone*, *Finsbury*, *Tower Hamlets*, *Southwark*, *Lambeth*, and *Greenwich*, the five first mentioned of which are situate in Middlesex, the two next in Surrey, and the last in Kent. The Parliamentary Divisions of the metropolis (in the number of which we venture to include the borough of Greenwich) will be seen in the following statement, which also exhibits the population of each borough according to the census of 1831, and the annual value of the included real property, as ascertained by the returns under the property-tax assessment in 1815:—

Metropolitan Boroughs.	*Parochial and other Divisions included either in whole or in part.*	*Population in* 1831.	*Annual value of real property assessed in* 1815.	*Representatives in Parliament.*
			£.	
LONDON,	The parishes within the ancient city and liberties, including the Inner Temple, and the Middle Temple,	132,803	1,056,158	4
WESTMINSTER,	The parishes within the ancient city and liberties, including the precinct of the Savoy,	202,891	1,254,702	2
MARY-LE-BONE,	St. Mary-le-bone; Paddington; and St. Pancras,	240,294	772,617	2
FINSBURY,	St. Luke; St. George the Martyr; St. Giles-in-the-Fields; St. George, Bloomsbury; St. Mary, Stoke-Newington; St. Mary, Islington; St. James and St. John, Clerkenwell; St. Sepulchre Without, and St. Andrew Without, Holborn; and the liberties, &c. of Saffron-Hill, Hatton-Garden, Ely Rents and Place, the Rolls, Glasshouse-Yard, the Charter-House, Lincoln's Inn, Gray's Inn, Furnival's Inn, and Staples' Inn,	226,086	803,372	2
TOWER HAMLETS,	Christchurch, Spitalfields; St. Ann, Limehouse; St. Botolph Without; St. George's-in-the-East; St. John, Hackney; St. John, Wapping; St. Leonard, Bromley; St. Leonard, Shoreditch; St. Mary, Stratford-le-bow; St. Mary, Whitechapel; St. Matthew, Bethnel Green; St. Paul, Shadwell; Stepney, including Mile-End, Poplar, Blackwall, and Ratcliffe; the Tower; the liberty of Norton-Folgate, and the precinct of St. Catherine,	367,864	915,058	2
SOUTHWARK,	The parishes in the old borough of Southwark, together with those of Rotherhithe, Bermondsey, and Christchurch; also the Clink liberties of St. Saviour's parish,	134,117	400,119	2
LAMBETH,	St. Mary, Newington-Butts; St. Giles, Camberwell; and that part of St. Mary, Lambeth, situate to the North of Brixton,	160,613	389,233	2
GREENWICH,	Parishes of Greenwich, Charlton, St. Nicholas and St. Paul, including Deptford, Woolwich, &c.	65,917	121,340	2
	Total,	1,530,585	5,712,599	18

The whole mass of building within the limits of London is said to comprehend about 9000 streets, lanes, terraces, &c., 80 squares, 24 market-places, and more than 180,000 houses. The streets are for the most part wide, few even of the most ancient of them being so narrow as to prevent two carriages from passing abreast, and in the newer districts many are broad enough to admit of five or six, and are besides interspersed with large open areas or squares. The finest streets are those in the quarters of Westminster and Mary-le-Bone. This portion of the town is known by the name of the *West-end*, and it contains the royal palaces, the seats of the legislative and executive government, the parks or public walks, and, in general, the residences of the aristocracy. The narrowest streets are in the *City*, which is the most ancient and central part of London. The *East-end* comprehends, along with other districts, the most populous portion of the borough of the Tower Hamlets, which is so called from its consisting originally of hamlets or villages holding of the constable of the Tower as their feudal superior, and being under his jurisdiction and authority. Many opulent merchants, particularly the class engaged in the foreign and colonial trade, have their counting-houses in this quarter; and it is the seat of many important manufactures, of which the most considerable are the silk manufacture of Spitalfields, and the sugar-refining business. It also contains the extensive docks and warehouses at Blackwall belonging to the East India-Company, those connected with the West-India trade at Poplar, the London Dock at Wapping, and St. Catherine's Dock, near the Tower. Southwark and Lambeth contain several extensive iron-founderies, breweries, rectifying distilleries, and vinegar works, and are besides distinguished for many other important manufactures, especially those of patent shot, plate-glass, steam-engines and other machinery, soap, starch, leather, and parchment, the particular seat of the two last of which is Bermondsey in Southwark.—The latest additions made to the town are on the sides of the north and north-west, ... places in the northern parts of the districts of St. Pancras, Fins-

bury, and the Tower Hamlets, formerly recognised only as villages, which are now, by means of the erection of continuous lines of streets, united to the capital. As the argillaceous loam or brick clay on which London stands affords an abundant and convenient supply of building material, most of the houses are built with bricks, which in the finer streets are faced with stucco in such a manner as to resemble polished stone. In general, the houses are about three stories high, and from their uniformity present an appearance by no means imposing. It has been remarked that there are few public buildings and monuments in London at all worthy of its extent and wealth; still among the number which it possesses there are edifices of every variety of style, character, and extent, and structnres adapted for every purpose of national or municipal government, law, religion, education, charity, science, art, sociality, amusement, and trade, abound throughout the city; but the mere enumeration of their names would occupy several of our pages. Our description, therefore, must necessarily be limited to a few of the more prominent and the more celebrated of these structures.

The *cathedral church of St. Paul*, in the city of London, claims our first attention, as being at once the most prominent, and the most interesting object. The spot on which it stands had been occupied for many centuries by successive churches of the same name, the last of which was destroyed by the great fire, in 1666. The first stone of the present building was laid by Sir Christopher Wren, in 1675, and the last in 1710, but the whole decorations were not finished till 1723. The church is in the Roman style of architecture, built in the form of a cross, with a large dome, in the centre. It is 500 feet in length, 180 in breadth, and the height, to the top of the cross, which surmounts the dome, 340. The whole building is of Portland stone, now very much discoloured by smoke and long exposure to the weather. The interior is very plain; but of late years, the dull monotony of its appearance has been, to a considerable extent, relieved by a number of monuments, erected to the memory of distinguished men. The *church of St. Peter*, Westminster, commonly called *Westminster Abbey*, though not so prominent an object as St. Paul's, is of not less distinguished fame. It is likewise in the form of a cross, but without a dome or central tower; and the tameness of its external appearance is but little relieved by two modern towers at its west end. The whole building is in the Norman and Gothic styles, and some parts of it are of great antiquity. The interior is crowded with monuments of the illustrious dead; and it is here that the ceremony of the coronation of the kings and queens of England is performed. The other churches of the metropolis are very small in size; and none of them can boast of high architectural character, except, perhaps, that of *St. Stephen*, Walbrook. Adjoining to Westminster Abbey, is *Westminster Hall*, the only remaining part of a palace commenced by King William Rufus. It measures 276 feet in length, by 100 in breadth, and is covered with an elegant roof formed of oak. It has long been occupied by the Supreme Courts of England, and is destined to form the entrance-hall of the magnificent buildings about to be erected for the accommodation of the Imperial Parliament. In the same neighbourhood is *Whitehall*, a small portion of a palace commenced by King James I. The design was furnished by Inigo Jones, and the ceiling was painted by Rubens; it is now occupied as a military chapel. The royal palaces of *Pimlico*, or *Buckingham House*, a modern stone building; and *St. James's*, an ancient, irregular, and gloomy structure of brick, are also situate in Westminster. To these may be added Somerset-House, in the same neighbourhood, a large pile of building, which is occupied by various public boards, and by King's College; the National Gallery; the British Museum; University College; Drury Lane and Covent Garden Theatres; the Temple and Lincoln's Inn, for students of law; and many other large and costly structures, more remarkable, however, for their extent and utility, than for their architectural elegance.

On the east side of London is *The Tower*, an ancient fortress, of little importance as a military defence, but of great historical interest. It derives it name from a lofty square tower, or keep, in the centre, erected by William the Conqueror, to overawe the citizens of London, and consists of a number of buildings irregularly piled together, and surrounded by a wall and ditch. The Tower is now used principally as an arsenal, or military storehouse, and occasionally also as a state prison. Here the Crown jewels are deposited, and also a portion of the public records of the kingdom. The *Bank of England* is likewise an immense, irregular, mass of buildings, in the heart of the city, completely isolated, and surrounded with a high wall, which is in some parts ornamented by architectural designs. Very near the the Bank, are the *Guildhall*, a large building used for the public meetings and festivals of the citizens of London; the *Mansion-House*, the residence of the Lord Mayor; and the site of the *Royal Exchange*, which was destroyed by fire in January 1838, and is about to be rebuilt on a more extensive and magnificent scale. The great fire, which destroyed nearly the whole of London in 1666, is commemorated by a pillar, called *The Monument*, 202 feet high, which stands close by London Bridge, and 202 feet from the spot where the fire is said to have commenced.

To whatever extent London may be deemed inferior to other cities in point of external decoration, it will yield to none in regard to the possession of the means of supplying the wants, and increasing the comforts, of a great population. The neatness of the squares, the convenience of the side pavements for the use of foot passengers, the general cleanliness of the streets, the brilliant light with which the latter are every evening illuminated, together with the amazing number of shops, and the costly merchandise therein displayed, are objects of interest to every visiter, and especially to foreigners. Nowhere else in the world are undertakings conducted on an equal scale of magnitude. Sewers, which rival, at least in point of extent, the celebrated constructions of the same nature at Rome, are the means of keeping the streets free from impurities. Water, that important necessary of life, is supplied by eight different incorporated companies, in quantities which, according to a statement laid before parliament in 1834, was sufficient to meet a yearly consumption of 238,914,761* hogsheads, the average daily supply being at the rate of 180¼ gallons to

* The immense supply stated in the text is drawn partly from the Thames, and partly from more distant sources. The most celebrated of these is that of the New River, an open canal executed in the 17th century, which is conveyed from near Ware, in Hertfordshire, to Islington on the north side of London, a distance of 40 miles. The New River Company furnishes a daily supply of 16,900,000 gallons.

each of 191,066 houses and buildings, including manufactories. The lighting of the metropolis is effected by several coal-gas companies, seven of which have been for years incorporated by acts of parliament. The business of these companies is on the aggregate conducted on a scale of prodigious magnitude, but we have no recent information as to its extent in detail. So far back as 1828, the total length of the underground main and branch pipes belonging to the gas-light companies, was estimated to exceed 300 miles, and the quantity of gas thus conveyed fed 7800 street lamps and 70,400 jets of argand-flames in shops and dwelling-houses. Six magnificent bridges cross the river Thames. Three of these, — namely, *London bridge*, which, after being rebuilt, was opened up in 1831, *Southwark bridge*, completed in 1819, and *Blackfriars bridge*, which has been in use since 1769, — afford the means of communication between the City and the borough of Southwark. Higher up the river, *Waterloo* or the *Strand bridge*, completed in 1817, *Westminster bridge* in 1750, and *Vauxhall bridge* in 1816, connect the districts of Westminster and Lambeth. London, Waterloo, Blackfriars, and Westminster bridges are built of stone, the material used in the construction of the two first mentioned being the most durable granite. Those of Southwark and Vauxhall are constructed of cast-iron; but in both, the metallic arches rest on piers and abutments of masonry. These bridges vary in length from 1,242 feet (Waterloo) to 708 feet (Southwark), in breadth of road-way from 53 feet (London) to 36 feet (Vauxhall), and in the span of the principal arches from 240 (Southwark) and 152 feet (London) to 76 feet (Blackfriars.) In addition to these communications, the *Thames Tunnel*, a subterranean passage beneath the bed of the Thames, was in 1825 commenced at a part of Rotherhithe, in Southwark, opposite to the London docks. The works connected with it have been protracted by frequent irruptions of the river, but the main difficulties which obstructed its progress are now overcome, and it is expected that the passage-way will be available by 1842. It will form a commodious passage for carriages as well as foot passengers, between the eastern districts of London and those of Southwark. When we mention that the expense attending this stupendous undertaking was at the outset upwards of £157,000, and fell entirely upon the projectors, and that among the bridges which, in a similar manner, owe their origin and completion to associations of private individuals, Southwark bridge has cost £800,000, and Waterloo bridge upwards of £1,000,000, the reader may be able to form some idea of the enterprising spirit and the wealth of the citizens of London. We may add, that along the west and north sides of the metropolis are several spacious parks, which are of great importance to the citizens as places of exercise and recreation, and eminently conducive to the preservation of the health of the public. These are St. James's Park, the Green Park, Hyde Park, and the Regent's Park. The last of these is surrounded by magnificent buildings, and contains the gardens of the Zoological Society, whose collection of animals is one of the most interesting and attractive objects of public curiosity. Hyde Park is the largest, and is continuous with Kensington Gardens, a large inclosure attached to the royal palace of Kensington. The Serpentine River, so often mentioned as the resort of the youth of London for skating in winter, is a large oblong pond, partly in Kensington Garden, and partly in Hyde Park.

We have already stated (see Table, *anté*, p. 226), that in 1831 London contained 1,530,585 inhabitants, or about a sixteenth of the entire population of the United Kingdom. It contained 230,000 inhabitants more than (according to conjecture) are to be found in Pekin or Jedo; 621,000 more than Paris did in 1836, and at least thrice the number of the population of Constantinople or Hangtcheou. Setting aside, however, the Chinese and Japanese cities, as their reputed populousness rests upon vague and doubtful authority, it is certain, that in respect to population, ancient Rome is the only city that can be said to have surpassed the British metropolis. What quantity of food is required for the sustenance of such an enormous congregation of human beings, we have not at present the means of ascertaining; but in 1826, when London was confined within narrower limits than at present, the yearly consumption of provisions by its inhabitants was stated to be 466,168 sacks of flour; 250,973 quarters of wheat; 158,920 head of cattle; 1,485,080 sheep; and 1,220,000 lambs, calves, and pigs. The consumption of porter during the same year was about 1,700,000 barrels; and that of coals for fuel upwards of a million and a half of chaldrons. At present the consumption of coals in dwelling-houses and manufactories exceeds 2,500,000 tons yearly. We may add, that it is estimated that there are annually consumed in London 38,400,000 quarts of milk, and 29,000,000 lbs. or 12,946 tons of butter; to supply which, 12,000 cows will be required for the former, and 200,000 for the latter. It would be tedious to enumerate all the other articles which are neces-

sary for the support of the population. The constant demand gives rise to a regular trade, and the supply is generally abundant, and reasonably cheap.

The city of London proper is governed by a *corporation* styled the *Lord Mayor, Aldermen, and Citizens of London.* It consists of 26 aldermen, who fill the office of Lord Mayor by turns, from year to year, two sheriffs, a recorder, town-clerk, and a common council of representatives, elected by the livery or freemen of the city. The citizens are distributed into 12 companies, some of which are very wealthy, and possess splendid halls. The municipal officers of Westminster are a high steward and a high bailiff, both appointed by the dean and chapter of the abbey. The other parts of the metropolis have no municipal officers, but are under the jurisdiction of the magistrates of the counties to which they respectively belong. For the better security of the public peace, a *new police* has been lately established under the immediate controul and superintendence of the Secretary of State for the Home Department. The *military garrison of London* consists of several regiments or battalions of horse and foot guards, stationed in Westminster, the Regent's Park, and the Tower; but their services are very rarely required for the suppression of civil disturbances.

London returns 20 members to the Imperial Parliament (see table, *anté*, p. 204); it is also the seat of a bishop, who ranks next in dignity to the archbishops of Canterbury and York.

London contains a *University* erected in 1836, by royal letters patent, for conducting examinations in literature, science, and art, and conferring academical degrees. It is governed by a senate, consisting of a chancellor, vice-chancellor, and a body of fellows; the chancellor and fellows being appointed by the Crown, and the vice-chancellor elected annually by the members of the senate. Connected with the University are two colleges, named *University College* and *King's College.* The former, which was opened in 1828, admits students without any reference to religious creeds: the latter, which dates its opening about two years later, is devoted exclusively to the education of members of the established church. The great public schools in which classical learning is taught, are *St. Paul's School*, founded in 1510; *Westminster School*, in 1590; *Christ's Hospital*, or the *Blue-coat School*, in 1552; the *Charterhouse School* (Chartreux), in 1611; *Merchant Tailors' School*, in 1561; and the *Mercers' Company School*, in 1531. There are also in London sixteen schools of medicine, as many of law, and five of theology; eighteen public libraries; a national museum; a national gallery of paintings; four patent, and thirteen or fourteen minor theatres; a botanical garden (at Chelsea); a horticultural garden (at Turnham-Green, Chiswick); two zoological gardens, besides many private establishments devoted to similar objects. The number of literary, scientific, and professional societies in the metropolis, exceeds fifty, of which fifteen have charters or acts of incorporation. The institutions connected with benevolent objects amount to several hundreds. So far back as 1830 (see "Companion to the Almanac" for that year) there were in London ninety-one institutions or societies for affording medical and surgical aid; eighty-five for granting pecuniary relief; eleven of the nature of correctional and penitentiary institutions; twenty-six miscellaneous benevolent institutions for promoting general and particular objects of humanity; fifty-five for promoting religious improvement; and eighty-one (exclusive of ward and parochial schools) for promoting general and religious education. Since that time, an increase has taken place in the number of these. Some of them are unparalleled for the extent of their operations, and the large amount of the funds voluntarily subscribed by their members. Let it suffice as an illustration of the correctness of this remark, that the income for the current year (1838-1839), of six of the leading metropolitan societies established for missionary and other religious purposes exceeded £489,000, of which sum it may be remarked, rather more than a half was received by three societies supported alike by churchmen and dissenters.

In regard to *manufactures*, although London, when compared with other large towns in the kingdom, can scarcely be called a manufacturing place; yet the various articles fabricated in and around it, afford employment to a great number of individuals. The silk trade is that in which at present the greatest number of people are occupied, their number being estimated at 48,000; but, owing to fluctuations in their trade, the workmen of this class are generally in a very poor and miserable condition, and exposed occasionally to much distress. There are numerous other small articles, which are either manufactured exclusively in London, or which, having the reputation of being produced there, meet with a readier sale in the market. Of the first class are silk fringes, coach-lace, gold and silver lace, lapidary articles; and of the second, needles, pins, fine scissors, and penknives, to which may be added musical,

mathematical, and surgical instruments; brushes, combs, watches, jewellery, gold, and silver plate; ornamental and useful furniture, coaches, and other carriages, saddlery, painter's and dyer's materials; numerous medicinal and chemical preparations, particularly magnesia, aquafortis, sal-volatile, essential oils, and other articles. Porter brewing is also a great trade, and almost peculiar to London, and the quantity produced for home consumption and exportation is very great. The printing and publication of books is also an extensive trade. The annual value sold is estimated at from £1,000,000 to £2,000,000. The number of single newspapers published annually in London exceeds 29,000,000.* According to the last population return, there are 8950 males, above twenty years of age, employed as printers, booksellers, and binders, or in other branches of the business. It is supposed to afford subsistence to about 50,000 individuals. The number of tailors is stated to be 13,783; of shoemakers, 15,274; of bakers, 5209; of butchers, 4069; of carpenters, 12,254; of cabinetmakers, 4921; of publicans, 4804; of upholsterers, 1724; of glaziers and plumbers, 2272; of bricklayers, 4874; of house painters, 4439; of blacksmiths, 4106; of whitesmiths, 1822; of plasterers, 1725; and of stone masons, 1592.

London, in respect to the *extent and activity of its commerce*, both inland and maritime, stands without a rival, and if we bring it into comparison not only with the principal trading cities in the world, but even with some of the states that are most distinguished for commercial activity, we shall find the result of our inquiries calculated to excite, in a high degree, feelings of astonishment. In December 1835, the aggregate tonnage of the vessels belonging to the port of London was 566,152 tons, which exceeded the tonnage belonging to the port of New York in 1836 by 162,338 tons, was nearly equal to a third of the tonnage of the entire mercantile navy of the United States in the same year,† and fell short of that of France in 1837‡ by only 130,826 tons. In 1825, 5,732 vessels of 1,060,687 tons aggregate burthen, loaded with the productions of every country in the world, entered the port of London, whilst the foreign commerce of France during the same year employed only a tonnage of 942,000 tons distributed among 8,704 vessels. At the same period the foreign commerce of the United States employed 1,048,000 tons of shipping; that of Prussia, 572,000 tons; that of the Netherlands, 559,000 tons; and that of the immense empire of Russia only 310,000 tons. Turning to compare the value of the exports of London with those of the principal trading cities and commercial states during some of the periods most favourable to commerce, we find that in 1815 the exports of the British metropolis amounted to the enormous sum of £22,183,950, and those of Liverpool, the second exporting place in the world, to £17,657,439. In 1824, the exports of Havre, the first port in France, for the value of its merchandise, did not exceed £2,720,000. The exports of Trieste, in 1826, amounted to £3,024,760; those of St. Petersburg, in the same year, to £3,398,080; those of Lisbon in 1819, to £2,804,520; those of New York, in 1824, to £4,660,680; and those of the Havannah, in 1826, to £2,012,080. The yearly exports of France, taking the average of the years 1825, 1826, and 1827, were valued at £34,402,720. According to similar valuations, Austria, in 1826, exported to the value of £8,240,000; Portugal in 1819, £4,861,951; Prussia, on the average of the years 1822 and 1823, £12,751,360; the United States in 1826 £18,507,840; Spain, in the same year, £1,469,113; and Russia, in the same year, £8,683,800. Since the dates given in the preceding statement, circumstances may have occurred tending to augment or diminish the extent of the commerce of the several places and states therein named; but in reference to the superiority of the foreign trade of London, it may be safely affirmed that at present it exceeds not only that of every other city in the world, but even the entire foreign trade of each of the countries we have mentioned — France and the United States alone excepted.

The vast superiority of London as a trading place, when put in comparison with the other great ports of the kingdom, may be inferred from some of the details which we have given under the head of the commerce of England and Wales. Another proof of its relative importance is derived from the fact, that under the lately existing arrangements for the conveyance of letters, it contributed not much short of one-third of the Post-Office revenue derived from the whole of the United Kingdom.‖

* The number of newspaper stamps issued during the year ending 15th September 1837 was 53,496,207, of which the distribution was as follows: — London Newspapers, 29,172,797; English Provincial Newspapers, 14,996,113; Scotch Newspapers, 4,123,330; Irish Newspapers, 5,203,967.

† Total tonnage, 1,882,012 tons.

‡ 15,326 vessels, of which the aggregate tonnage was 696,978 tons.

‖ During the year ending January 1838, the amount of postage collected at LONDON was £697,897; Liverpool, £90,747; Dublin, £70,070; Manchester, £69,332; Glasgow, £43,029; Edinburgh, £42,704;

A notion of the value of the inland and maritime trade of London can only be arrived at by approximate calculations. So far back as 1810, the total value of the merchandise transferred yearly by the trade of London was estimated at £120,000,000. Since that date the metropolis has advanced rapidly in population, manufacturing, industry, and commerce.

The Thames itself forms the *port of London;* and for several miles below London bridge the river is constantly crowded with ships from every part of the world, the masts of which present the appearance of an interminable forest. The limits of the port, however, are London Bridge and Deptford. The upper portion, extending from London Bridge to Limehouse, is divided into the *Upper*, *Middle*, and *Lower Pools*, below which, as far as Deptford and Greenwich, are two divisions named *Limehouse Reach* and *Greenwich Reach*. Further down the river, *Blackwall*, *Rugsby*, *Woolwich*, *Gallions*, and *Barking Reaches*, occur in succession. The celebrated docks connected with the port and trade of London, are the *West-India Docks*, the *London Docks*, *St. Katherine's Docks*, the *East-India Docks*, and the *Commercial Docks*. The first four of these are, as we have already noticed, situate on the north or Middlesex side of the Thames. The Commercial Docks are built on the Surrey side, at the bend of the river, opposite to Limehouse on the north, and the Isle of Dogs on the east. These great works are constructed on a most extensive scale. The tobacco warehouse belonging to the London Docks covers a space of nearly five acres, and the underground vaults, which are 18¼ acres in extent, afford stowage for 60,000 pipes of wine.

In short, London is the grand centre of the commerce of the world, and the place to which the traders and money-dealers of all nations resort. In respect of wealth, and the extent and activity of its trade, it has no rival; and we seek in vain for any city in the ancient world which may be put in comparison with it. In respect of population, ancient Rome, as we have already remarked, is the only city which can be said to have surpassed it; for the reputed populousness of some of the cities of China and Japan rests upon vague and doubtful statements.

The most remarkable places in the vicinity of the metropolis will be described under the heads of the counties in which they are situate.

§ 2. *Bedfordshire.*

Bedford, the capital of the county, is a neat, clean town, situate on both banks of the Ouse, 48 miles N.N.W. of London. By its command of the navigation of the Ouse, it carries on a considerable trade in corn, coal, iron, and timber, with Lynn and Yarmouth. It contains several churches and charitable establishments, particularly a free-school, founded in 1566 by Sir William Harper, a native of this place, and alderman of London, who endowed the institution with estates that now produce £10,000 yearly. *Woburn Abbey*, the residence of the Duke of Bedford, is a spacious and noble building in the middle of an extensive park, near the town of *Woburn*. It is furnished with a large and valuable collection of statues and paintings, and is famous for the agricultural establishments of the noble proprietor. *Luton-hoo* is another very magnificent edifice; it belongs to the Marquis of Bute, and is superbly furnished with books, paintings, and sculptures. *Biggleswade*, on the river Ivel, in the east of the county, is noted for its corn and cattle markets. The corn-trade and the manufacture of lace and straw-plait, are carried on to some extent at *Leighton Buzzard*, near the borders of Buckinghamshire. *Luton*, and the smaller town of *Dunstable*, both situate in the south of the county, are distinguished for the manufacture of straw-plait.

§ 3. *Berkshire.*

Reading, the county town, stands on a rising ground on the banks of the Kennet, and is neatly and regularly built, though the houses are of brick, and the streets narrow. It carries on a considerable trade in flour, malt, corn, &c., and has two weekly markets. The woollen manufactures, of which at an early period this town was the seat, have long since fallen into decay, and their loss is now inadequately supplied by the making of coarse linens, sail-cloth, and sacking. *Newbury*, situate higher up the Kennet, still preserves, in its serges and shalloons, some vestiges of its ancient and important manufactures, in which John Winschomb, commonly called Jack of Newbury, rose to as great a celebrity as that claimed by the inhabitants of Reading for

Bristol, £35,711; Birmingham, £32,474; Leeds, £23,343; Hull, £16,089; Cork, £13,816; Sheffield, £13,929; Belfast, £11,578; Norwich, £10,199; Aberdeen, £9,612; Nottingham, £9,456; Dundee, £9,430; Limerick, £7,203; Potteries and Newcastle (Staffordshire), £7,203; Leicester, £7,075; Preston, £6,673; Coventry, £6,029.

their famous clothier Thomas Coole, or Thomas of Reading. The little town of *Wantage*, situate in the centre of the western portion of the county, is remarkable as as being the birth-place of Alfred the Great. Immediately to the west of Wantage is the fruitful valley called *White-horse Vale*, which derives its name from a gigantic figure of a horse rudely marked on the face of a chalk hill, and which is preserved with great care by the country people. The towns of *Wallingford*, *Abingdon*, *Maidenhead*, and *Oakingham*, are engaged to some extent in the malt trade. *Windsor*, 22 miles from London, is a considerable town, with a bridge over the Thames; but is chiefly remarkable for its magnificent castle, the chief residence of the sovereigns of England. The castle is built on an eminence, which rises gradually above the town and the river, and forms a commanding feature in the prospect for many miles around. The castle was almost entirely renewed, and received its present form and appearance in the reign of George IV. The principal part of the edifice consists of the central tower or keep, and two wards or courts, surrounded externally by terraces raised to a considerable height. The apartments are in the highest degree elegant, and superbly furnished. St. George's Chapel, a fine Gothic structure, which stands at the west side of the castle, was repaired and embellished by George III, who likewise built within it a mausoleum for himself and family, where the remains of three kings, one queen, and several princes and princesses are already deposited. Attached to the castle are two parks—the little park, between it and the river, and the great park, at some distance to the south, but connected with the castle by a long avenue. The great park contains 3,800 acres, and an artificial lake of considerable size, called Virginia water, which was formed and embellished by George IV, and presents some very picturesque scenery. *Sandhurst*, situate near the junction of Berkshire, Hampshire, and Surrey, is the seat of the Royal Military College.

§ 4. *Buckinghamshire, or Bucks.*

Aylesbury, situate in the middle, and *Buckingham* in the north-west of Buckinghamshire, are its two county towns, and in the early periods of English history were places of some importance. The only branch of industry followed in either is the manufacture of thread lace, of which article a greater quantity is made in Buckinghamshire than in any other county. The ancient towns of *Great* or *Chipping Marlow*, *High* or *Chipping Wycombe*, and *Amersham*, situate in the south of the county, are all connected with the lace-trade; but many of their inhabitants find employment in the numerous paper-mills that have been erected in their several vicinities. The principal object of a public character in this county is *Eton College*, founded in 1440 by king Henry VI., for the maintenance and education of a certain number of boys. It has now become the principal classical school in Britain for the sons of the nobility and higher gentry; the number of pupils amounting to between three and four hundred. The chapel is a fine specimen of the Gothic architecture of the age in which it was erected. Eton is situate on the north bank of the Thames, opposite to Windsor, and is celebrated for the beauty of the valley in which it stands, the flourishing state of its endowments, and the number of eminent men who have there received their education. North of Windsor bridge is *Slough*, distinguished as having been formerly the residence of the elder Herschel, the astronomer. Near the town of Buckingham is *Stowe*, the splendid residence of the Duke of Buckingham, celebrated for its fine grounds, and its collection of pictures and statues. Cowper the poet had his residence in the neighbourhood of the little market-town of *Olney*, in the north-east of the county. *Hartwell*, in the vicinity of Aylesbury, was the asylum of Louis the Eighteenth of France, during the greater part of his exile.

§ 5. *Cambridgeshire.*

Cambridge, the county town, is built on the right bank of the river Cam, in an extensive, but not very fertile plain, and, in point of situation, is considered to be very salubrious. The river is navigable to the Ouse, and communicates with the sea by the port of Lynn. Neither the streets nor private buildings are remarkable for their neatness and elegance; but the recent additions and embellishments which the colleges have undergone, have contributed materially to the improvement of the town. Cambridge is chiefly remarkable for its University, which is a corporation of itself, and sends two representatives to parliament, who are elected by a body of upwards of twelve hundred voters, consisting of the doctors and masters of arts. The University consists of seventeen colleges and halls,* which were erected and

* The following are the names of the several colleges and halls:—1. *St. Peter's College*, founded in 1284 by Hugh de Balsam, Bishop of Ely: 2. *Clare-Hall*, first founded by Richard Badew or Badow in 1326, and afterwards rebuilt by Lady Clare; 3. *Pembroke-Hall*, founded in 1363 by Mary Countess

endowed at various times. Each of these is a separate corporate body, possessing the buildings and libraries, and enjoying large funds, from which the expenses of the establishment, and the salaries of the officers, fellows, and scholars, are defrayed (see *anté*, p. 195.) They have each a separate chapel, library, and hall, with apartments for the use of the members of the college. They have also tutors, who conduct the education of the students, and officers, whose duty it is to maintain due discipline. Besides the public tutors, there are also in each college private tutors, of whose services the more aspiring pupils generally avail themselves. These minor corporate bodies are, however, all subject to the general corporation and government of the University, at the head of which is a chancellor, generally a nobleman of high rank, who has been educated at the University; but whose ordinary duties are performed by a vice-chancellor, and other subordinate officers. In addition to the tutors of colleges, there is a number of public professors and lecturers on the establishment of the University. The number of members on the books in 1837 was 5527. The principal literary and scientific establishments connected with the University are the two public libraries; the Fitzwilliam museum, bequeathed, together with a munificent endowment for its support, by Viscount Fitzwilliam in 1816; the valuable collection of ecclesiastical history gifted to Corpus-Christi college by Archbishop Parker; the astronomical observatory; and the botanic garden. The public buildings of Cambridge are considered, on the whole, inferior in point of architectural magnificence to those of Oxford; yet they include some of the works of Wren and Inigo Jones, and the chapel of King's College is correctly deemed one of the most perfect specimens of gothic architecture to be seen in England. The gardens and walks attached to the different colleges are unrivalled in beauty. *Ely*, situate 17 miles to the north of Cambridge, is a small episcopal city, with a fine cathedral, a free grammar-school, and two charity-schools. *Newmarket*, a small town situate partly in Suffolk, is noted for its race-course, which is reckoned the finest in England. *Wisbeach*, a well-built town, situate on the river Nene, in the north-east of the Isle of Ely, is the only port in the county; its trade, which is considerable, consists chiefly in corn, butter, timber, coals, and wine. Cambridgeshire is strictly an agricultural county, almost the only semblance of manufactures which it possesses being limited to the fabrication of coarse pottery. One of its most remarkable districts is the *Isle of Ely*, situate to the north of the river Ouse, and forming part of a vast marshy plain extending into six several counties, the draining of which was successfully begun, during the protectorate of Cromwell and the reign of Charles the Second, by William Duke of Bedford, from whose title the whole tract has received the name of the *Bedford Level*. In the laborious process of reclaiming these fens, the resources of modern skill have been advantageously brought to aid the ruder efforts made in the infancy of engineering science. By substituting the constant power of the steam-engine for the uncertain agency of the windmill in the operation of draining, land that till lately bore only precarious crops of oats and rape-seed, now produces the finest wheat grown in England.

§ 6. *Cheshire.*

Chester, the county town and also the see of a bishop, is situate on the Dee, about six miles from where the river, after flowing for that distance through a partly artificial bed, falls into an estuary of the Irish channel. Two bridges, one of which consists of only one arch of 200 feet span, connect the city and county with Flintshire. The city bears many marks of high antiquity, and in the distribution of its streets, retains ample proofs of having been occupied by the Romans. Many of the houses are very old, with projecting galleries which overhang the pavement of the streets. The ancient walls are still in good preservation, and afford to the inhabitants an agreeable promenade of nearly two miles in circuit. The cathedral is plain, but the chapter-house is an object of general admiration. Chester is the only sea-port in the county. It was once one of the most flourishing ports on the western coast, and the principal

of Pembroke; 4. *Corpus-Christi College*, begun in 1344 by two societies or guilds, and completed by Henry Duke of Lancaster in 1356; 5. *Caius' College*, originally founded by Edward Gonville, a divine, and afterwards endowed by Dr. Caius, physician to Queen Mary; 6. *King's College*, founded by Henry the Sixth; 7. *Catherine-Hall*, founded in 1745 by Robert Woodlark, chancellor of the university; 8. *Jesus College*, originally a convent of Benedictine nuns, which was suppressed by Henry the Seventh; 9. *Christ's College*, founded by William Bingham, a London divine, in 1442, rebuilt on its present site by Henry the Sixth, and farther endowed by the Countess of Richmond, mother of Henry the Seventh; 10. *St. John's College*, founded also by the Countess of Richmond; 11. *Trinity College*, founded by Henry the Eighth; 12. *Emanuel College*, founded in 1548 by Sir Walter Mildmay, a privy councellor to Queen Elizabeth; 13. *Sidney-Sussex*, founded in 1590 by the Countess of Sussex; 14. *Magdalen College*, founded by a Norman baron in 1092; 15. *Queen's College*, founded in 1448 by Margaret of Anjou, the consort of Henry the Sixth; 16. *Trinity-Hall*, founded as a college, in 1351, by Bishop Bateman; 17. *Downing College*, first opened to students in 1821, founded on a reversion of valuable estates bequeathed for that purpose by Sir George Downing, who died in 1749.

seat of the trade in Irish linens, now transferred to Liverpool. Its exports at present are, salt, copper, and other minerals, and vast quantities of cheese, of which not less than 11,500 tons are annually made in the county. The making of gloves forms the principal branch of industry in Chester. *Macclesfield*, in the north-eastern portion of the county, has risen into considerable importance from its thriving silk manufactures, and although situate in the immediate vicinity of a wild and dreary tract, is, next to Stockport, the most populous place in Cheshire. The silk trade was also formerly carried on to a great extent at *Stockport*, on the Mersey, but it has now given place to the cotton manufactures. *Runcorn*, on the Mersey, at the entrance of the Duke of Bridgewater's Canal, has, in consequence of its situation, become of some note as a trading place.

§ 7. *Cornwall.*

Launceston, the county town, stands on a gentle elevation, overlooking the river Tamer, with which it is connected by a little stream called the Atterly. *Falmouth*, the principal station of the post-office packets for the Mediterranean, West Indies, and America, is situate on the shore of a fine harbour, exactly 5° or 273 miles from London. It has also a considerable trade in the pilchard fishery. In its vicinity is *Pendennis Castle*, which was built by Henry VIII., improved by Elizabeth, and greatly strengthened by Cromwell. *Penzance* is the most westerly town in England, and much resorted to by invalids, on account of the extreme mildness of its climate. Falmouth and Penzance are the two principal sea-ports in this county. The ports of less importance are *Fowey*, on the west bank of the river of that name; *Gweek*, on the river Hel, which falls into the English channel to the east of the town of Helston* and the south of Falmouth harbour; *St. Ives*, on the south-western side of the bay of that name; *Padstow*, on the south side of the spacious opening or harbour, into which the river Camel falls; and *Truro*, situate at the confluence of the Kenwyn and the St. Allen, two little streams which flow into Falmouth harbour. There is a custom-house in the small town of *Heugton* or *Newton*, in St. Mary, the largest of the Scilly islands. As Cornwall derives its wealth and importance almost exclusively from mining operations, it cannot boast of many other branches of industry. There are, however, some paper-mills on the streams near *Hayle*, a village in the vicinity of St. Ives (of the port of which it is a custom-house dependency), and remarkable for its extensive smelting-works; carpets are made at *Truro*, and coarse woollen stuffs at *Callington*, *Launceston*, *St. Austle*, *Bodmin*, and other towns. The present *stannary* towns, or those to which the miners are obliged to carry their blocks of tin to be stamped by the proper officers are, — Launceston, Lostwithiel, Truro, Helston, and Penzance.

§ 8. *Cumberland.*

Carlisle, an episcopal city and also the county town, situate at the confluence of the river Eden with the Caldew, was anciently surrounded by walls, which have mostly fallen to ruin and been removed. Some of the streets are spacious, and contain good houses; and the city is adorned with numerous public buildings, of which the castle, originally built by William Rufus, the cathedral, and St. Cuthbert's church, are the most conspicuous. There is also a fine stone bridge across the Eden, nearly a quarter of a mile long. Carlisle is a place of great antiquity, having been employed as a British station previous to its occupation by the Romans. Its position as a border city exposed it to various reverses of fortune, and it is only since the commencement of the present century that its prosperity has been allowed to advance unchecked. Various branches of the cotton trade are carried on in the city; there is also an export trade in Irish linens; and several iron-works have been established. Carlisle communicates with the sea by a canal 11¼ miles in length, terminating at Bowness, on the Solway Firth; and its trade as a port must have greatly increased since the completion of the railway which connects it with the town of Newcastle. The Roman wall passes by Carlisle a little to the north, and in the vicinity of the town there are some remarkable druidical monuments particularly that called Long Meg and her daughters. *Whitehaven*, a large town, situate in an important mining, and to some extent manufacturing, district, possesses an excellent harbour, and besides carrying on an extensive trade with Ireland, Scotland, and the west coast of England, has a considerable commerce with the West Indies, and is largely engaged in ship-building. *Workington* is also a large and populous town, with a commodious harbour, and carries on a considerable trade in coal and iron, the produce of the mines. Workington and the neighbouring town of *Maryport*, together with the vil-

* *Helston* is situate on the river Cober, the mouth of which being obstructed by a great bank thrown up by the action of the sea, the stream expands into a remarkable lake named the *Loe-Pool*.

lage of *Harrington*, are custom-house dependencies of the port of Whitehaven. The inland towns are of little importance: *Cockermouth*, on the Derwent, manufactures hats, shalloons, coarse woollen, and linen; several cotton works have been erected at the romantic town of *Keswick*; *Penrith* possesses some trade in fancy woollen stuffs; and the inhabitants of *Wigton* are employed in the manufacture of cotton. The famous plumbago mine, to the excellence of the material derived from which the English pencils owe their superiority, is situate on the side of Seatallor-Fell in Borrowdale, about eight miles south from Keswick.

§ 9. *Derbyshire.*

Derby, the county town, is situate in a beautiful and fertile valley, watered by the Derwent, which is navigable to the Trent. It includes five parishes, whose respective churches are the chief ornaments of the town. The houses are well built, the market-place forms a fine square, and the town hall, assembly room, and the church of All Saints, are respectable edifices. The first silk-mill in England was erected here, and still continues to prepare the raw material for the subsequent processes of the manufacture. Derby was once famous for its fine china or porcelain, which is now in a great measure superseded by that manufactured at Colebrook-dale, but there is still a china-work where beautiful ware is produced. The cotton trade, especially in hosiery, furnishes employment to numerous persons. There are also many engaged in the manufacture of jewellery, and small articles of gold and silver. In the north of the county, the small but thriving town of *Chesterfield*, situate on the Rother, is noted for its silk and cotton works; several potteries and iron-founderies have been established in the vicinity of the town; and by its canal the produce of the neighbouring lead and coal mines are conveyed to the Trent. The fashionable watering places, *Buxton* and *Matlock*, the former situate in the south-west of the district of the High Peak, the latter eight miles south-east of the market town of *Bakewell* in the same district, have long been celebrated for their mineral springs. The heat of the Buxton water is 82°, and is not affected by the varying temperature of the atmosphere. The water is remarkably pure, and very slightly impregnated with saline particles. It is used for both bathing and drinking, and is chiefly recommended for gout, rheumatism, derangement of the biliary and digestive organs, &c. The Matlock water is not so warm as that of Buxton, being seldom more than 68°. It is also pure, but less impregnated with mineral substances than that of Buxton. There are likewise mineral springs at *Bakewell* above mentioned, *Stony Middleton*, and *Keddleston*; and a chalybeate spring at *Quarndon*, three miles from Derby, which is much celebrated. At *Barmoor*, near *Tideswell*, in the High Peak district, is an intermitting spring called the ebbing and flowing well. *Tunsted*, near the village of Wormhill, about three miles south of Tideswell, was the birth-place of James Brindley, the celebrated engineer, to whose contrivance and skill almost all the great canals of England owe their existence. *Chatsworth*, the splendid mansion of the Duke of Devonshire, is situate on the Derwent, three miles to the east of Bakewell. The abundant supply of gypsum derived from the quarries in the neighbourhood of *Chellaston*, five miles south of Derby, and the marble quarries of *Aston*, about six miles N.N.E of Tideswell, have given these places, although otherwise of no great note, considerable importance. *Bolsover Moor*, about nine miles east of Derby, yields a remarkably fine magnesian limestone or dolomite, which in all likelihood will, agreeably to the recommendation of the Parliamentary Commission, be used in the construction of the new buildings for the accommodation of the Imperial Parliament. The north-western part of the county, or the High Peak district, consists of mountains and moors, and is famous for its caverns, of which the most celebrated is that near *Castleton*.

§ 10. *Devonshire.*

Exeter, an episcopal city, also the capital of the county, stands on the slope of a rising ground on the east bank of the Exe. The city, though small, contains numerous public buildings, among which are the cathedral, a large and magnificent structure of great antiquity, eighteen other churches, the bishop's palace, a session's house, a county gaol, an hospital, guildhall, and theatre. Over the Exe is an elegant stone bridge; and there is a custom-house on the quay, at which vessels of 150 tons can unload. The distance from London is 173 miles. *Plymouth* is an ancient town, with narrow, steep, and inconvenient streets, at the mouth of the Plym. *Devonport*, formerly called Plymouth-dock, stands on the east side of the mouth of the Tamer, where it expands into the noble estuary of *Hamoaze*. It has grown up into a large town round the royal dockyard, to the westward of Plymouth, and between them is a straggling town named *Stonehouse*. These are all situate on Plymouth

sound, and derive their importance chiefly from being a principal station of the royal navy. *Exmouth*, about 10 miles below Exeter, has some trade, chiefly in fish, but is better known as a favourite resort for sea-bathing. *Ilfracombe*, on the north coast of Devon, has a well-built pier, and contains some good houses, and a large but plain-looking church. It possesses a natural harbour, completely sheltered against storms, and capable of receiving ships of 230 tons burden. Plymouth, and Exeter (with its sub-port *Teignmouth*) are the principal sea-ports in the county. The less considerable ports are *Barnstaple*, on the eastern bank of the river Taw; *Bideford*, on the river Towridge, a little above its union with the Taw; and *Dartmouth*, on the western bank of the river Dart, near where it falls into the Channel. Ilfracombe, to which we have already alluded, is also a port.

§ 11. *Dorsetshire.*

Dorchester, the county town, is a place of great antiquity, but of no modern importance. *Weymouth*, a place of some trade, stands on the western bank of the river Wey, opposite to the town of *Melcombe Regis*, with which it is united by a fine bridge built of stone. *Poole*, a large seaport, with 6000 inhabitants, and carrying on a considerable trade, is situate on the north side of a deep bay formed by the projection of the sort of peninsula incorrectly named the Isle of Purbeck. *Bridport*, on the south-west coast, is noted for ship-building. *Lyme*, or *Lyme Regis*, has a good harbour, which has been constructed at a considerable expense, and the town is much frequented for sea-bathing. Weymouth, Poole, Bridport, and Lyme, hold the rank of ports.

§ 12. *Durham.*

This county was formerly a county palatine, the government of which was vested in the bishop; but in 1837 the supremacy was annexed to the Crown, the palatine courts abolished, and the bishop restricted to his ecclesiastical functions and authority. The city of *Durham*, the capital of the county, is situate nearly in the centre of the latter, on a rocky eminence, almost surrounded by the river Wear, over which there are three bridges. The streets are steep, narrow, and inconvenient. The principal public buildings are the cathedral and the castle or palace, both built on a lofty rock, which is washed by the Wear on the western side. The cathedral is a majestic edifice of great antiquity, and contains the once venerated remains of St. Cuthbert. A college, principally for the education of clergymen for the Church of England, was founded here in 1832 by the bishop and chapter, and incorporated by royal charter in 1837, under the name of the University of Durham. *Sunderland*, *Monkwearmouth*, and *Bishopwearmouth*, form one town, at the mouth of the Wear, over which there is a stupendous iron bridge, consisting of a single arch, 236 feet span, and of such a height as to allow vessels of 400 tons to pass beneath, with only their top-gallant masts lowered. The principal trade of the town is in coals and lime; about 1,000,000 tons of the former, and 40,000 tons of the latter, being annually exported from the Wear. There are also several extensive manufactories of salt, glass, earthenware, ropes, sailcloths, and chain-cables. There are 30 yards for building large ships, five for small craft; four dry, and four floating docks. *South Shields*, at the mouth of the Tyne, is a flourishing seaport, which participates to a great extent in the commerce of Newcastle. *Gateshead*, an ancient borough on the Tyne, opposite Newcastle, with which it is connected by a handsome stone bridge. *Stockton-upon-Tees* is one of the handsomest towns in the north of England, and is situate at the mouth of the Tees, over which there is a bridge of five arches. It carries on a considerable foreign trade, and contains manufactories of sailcloth, ropes, damask, diaper, huckabuck, and linen. Stockton is connected by a railway with *Darlington*, also on the Tees, where the great north road from London crosses the river by a bridge of three arches. *Hartlepool* is a small seaport town on a peninsula to the north of Teesmouth. In north Durham, the only place of note is *Norham*, a small town on the Tweed, seven miles above Berwick, with the remains of a magnificent castle, celebrated in the border wars of England and Scotland. The inland towns in this county are of no considerable importance. *Bernard Castle*, on the Tees, may be mentioned on account of its great corn-market. *Bishop Auckland*, on the Wear, derives its consequence from its episcopal palace, the principal residence of the bishops of Durham. The only sea-ports in the county are Sunderland and Stockton.

§ 13. *Essex.*

Colchester, a large town on the north bank of the Colne, about three miles in circumference, and divided into twelve parishes. The inhabitants are employed in the

manufacture of baize, serge, and silk stuffs. A large portion of the trade of the town arises from the fishery of oysters, which have long been celebrated for their richness and flavour, and are exported to London in immense quantities. *Harwich*, a small burgh at the north-eastern extremity of the county, has a harbour so capacious as to admit 400 ships at the same time. The inhabitants are employed chiefly in ship-building, fishing, and in the service of the packets which sail between this port and the opposite continent. *Maldon* is an ancient burgh, at the confluence of the Black-water and the Chelmer. *Chelmsford*, situate at the confluence of the Chelmer and Essex Cam, near the centre of the county, is the county town, where the assizes and quarter-sessions are held. The county-hall, assembly-rooms, jail, church, and many elegant private houses, are the chief ornaments of the town, which is rendered still more agreeable by the beauty of the surrounding country. *Tilbury Fort*, on the Thames, opposite Gravesend, was built by Henry VIII., enlarged into a regular fortification by Charles II., and is mounted with heavy guns for the defence of the river. *Purfleet*, also on the Thames, is the great depôt of gunpowder for the use of the government; chalk is extensively quarried in its vicinity. *Epping*, on the east bank of the Lea, near London, is celebrated for its butter, and for the royal forest, where the citizens of London enjoy the privilege of hunting a buck on Easter Monday — an amusement of which many inhabitants of the metropolis avail themselves. *Waltham Abbey*, a thriving market-town, built near the junction of Essex with Hertford and Middlesex, derives its name from a magnificent ecclesiastical structure now in ruins. A little to the west of the town, and on the Hertford side of the Lea, is a beautiful monumental cross, erected by Edward the First to the memory of his wife Eleanor. We mention *Dunmow*, a market-town situate about thirteen miles to the north-west of Chelmsford, on account of the singular and well-known ancient manorial custom of the "Delivery of the Flitch of Bacon," which has been long kept up in the neighbouring parish of *Little Dunmow*. Essex was at one time celebrated for its woollen manufactures, almost the only remaining portion of which are some branches of the cloth trade carried on at *Cogges-hall*, *Braintree*, and *Bocking*, on the river Black-water. There are four sea-ports in this county, viz. Colchester, Maldon, and Harwich, which have been already noticed, and the little seaport of *Leigh*, situate at the mouth of the Thames, opposite to the eastern point of Canvey Island.

§ 14. *Gloucestershire.*

This important county is naturally divided into three very different districts, namely, the *Cotswold*, a high and bleak tract on the east of the county, the fertile *Vale of the Severn*, in the middle, and the *Forest of Dean*, abounding in coal and iron, on the west. Numerous flocks of sheep are reared in the first of these districts, and the rich pastures of the Vale furnish the cheese for which Gloucestershire is so celebrated, and of which 12,000 tons are annually exported. *Gloucester*, an ancient and fine city, the capital of the county, and, jointly with Bristol, the see of a bishop, stands on the eastern bank of the Severn, and, by the arrangement of its four principal streets, presents sufficient evidence of its Roman origin. Its distinguishing feature is its cathedral, which is one of the noblest structures of the kind in England. Favoured by the command of the Severn Navigation, and a connection with the canals of Stroud-water and Berkley and Gloucester, this city carries on a considerable trade. It has been long celebrated for its manufacture of pins, and a foundry for the casting of bells for churches and other public edifices. The celebrated George Whitefield was a native of this city; and we have elsewhere mentioned (*anté*, p. 195), that it was here that Robert Raikes, the original contriver of Sunday-school instruction, first carried his benevolent efforts into effect. *Bristol*, a commercial city of great antiquity, is healthily situate on the north side of the Lower Avon, in the midst of a fertile country, surrounded by verdant hills. The city, including the suburb of Bedminster, in Somersetshire, to the south of the Avon, is nearly eight miles in circumference, and is supposed to cover 1,600 acres. It contains 750 streets, squares, and lanes, ten markets, seventeen churches, and five chapels. Bristol, along with Gloucester, although second in point of precedence, gives a title to a district. The cathedral, originally the church of an Augustin monastery, consists of a neat Gothic choir, with part of the nave and two side-aisles, all of equal height; but the principal ecclesiastical building in this city is the beautiful church of St. Mary Redcliffe, the tower of which is nearly 200 feet high. The public schools and educational societies are numerous and flourishing; and the city contains many hospitals, almshouses, and other charitable institutions. The principal manufactories are those of sugar, iron, brass, copper, lead, zinc, floor-cloth, glass bottles, and earthenware;

but the heavy amount of the local taxation operates as a serious check to the manufactures, as well as the general trade of the city. Bristol nevertheless carries on a considerable foreign trade, chiefly with the East and West Indies and America; and also an extensive home traffic with the western counties and North and South Wales. The public works connected with the port of Bristol are among the most extensive of the kind in England, and perhaps in the whole world. The quay, which is built of hewn stone, presents a wharf upwards of a mile in length; and a large floating harbour, capable of accommodating vessels of 1000 tons burthen, has been formed by damming up the bed of the Avon, and its northern tributary stream the Frome, and cutting a new bed for the former. *Clifton*, a little to the west of Bristol, of which it may be considered a fashionable suburb, is celebrated for its romantic scenery. It was first brought into notice about the close of the 17th century, in consequence of its hot springs, which are supposed to be peculiarly efficacious in cases of debility or consumption. To facilitate the communication between the city and Clifton, a magnificent suspension-bridge, the works of which are now in progress, is to be thrown across the bed of the Avon, at such a height above the level of the tides, that vessels of the largest class will be able to pass underneath the arch without lowering their topmasts. *Cheltenham*, which derives its chief importance from its mineral waters, occupies a pleasant situation in an amphitheatre formed by the Cotswold hills. One of the wells is chalybeate, the other sulphureous; and both are resorted to by great numbers of invalids, for whose amusement there is a spacious assembly room, and an elegant theatre. *Stroud*, situate near the confluence of the Frome and the Sladewater, and on the line of canal navigation which extends between the Severn and the Thames, is the centre of a considerable cloth manufacture. The same manufacture is also carried on at *Wotton-under-Edge*, and at *Dursley*, a few miles to the south-west of Stroud. The ancient town of *Tewkesbury*, situate near the confluence of the Avon with the Severn, carries on, besides a considerable inland trade, several branches of manufactures, especially in stocking frame-work knitting, in nail-making, and in tanning and malting. The market-town of *Cirencester*, situate on the Chure, was a place of considerable importance when the Romans were in possession of Britain, but is now little better than a mere village. *Berkeley*, a small but thriving town, and the centre of the traffic in the dairy produce of the beautiful vale of that name, bordering on the Severn, deserves to be mentioned as the birth-place of the celebrated Jenner, who first introduced vaccination into medical practice. *Berkeley Castle*, near the mouth of the Severn, is an ancient baronial mansion of the Earls of Berkley, where the inhuman murder of King Edward II. was perpetrated here in 1327. On the eastern border of the county, about 14 miles E.N.E. of Bristol, and 7 from Malmesbury, is *Badminton house*, the chief seat of the Duke of Beaufort, one of the finest of the ducal mansions of England. Bristol and Gloucester are the only sea-ports in this maritime county.

(*Hampshire* or *Hants*—see *Southamptonshire.*)

§ 15. *Herefordshire.*

Hereford, an ancient and episcopal city, the capital of the county, is situate on the northern bank of the Wye. Its cathedral, built after the model of that of Aix-la-Chapelle, is greatly admired for the lightness and elegance of its details. The other principal buildings are the bishop's palace, college, shire-hall, theatre, gaol, and some hospitals. The trade of the place is in cider, hops, and tanner's bark; its manufactures are trifling, and are limited to those of gloves, flannels, and hats, the first of which, however, was formerly carried on to a great extent. *Leominster*, on the Lugg, a tributary of the Wye, and *Ledbury*, on the Leddon, which falls into the Warwickshire Avon, carry on some trade in wool, cider, hops, and malt; but most of the manufactures in which these towns were formerly engaged are now removed to other places. In the south of the county, and situate in the valley of the Wye, is the little town of *Ross*, well known as the native town of John Kyrle, the 'Man of Ross,' whose benevolence and public spirit are celebrated in Pope's well-known poem.

§ 16. *Hertfordshire.*

Hertford, a town of Anglo-Saxon origin, and the capital of the county, derives its commercial prosperity from its situation on the Lea Navigation. Its ancient castle was the scene of the captivity of two crowned heads, namely, John, King of France, and David the Second, of Scotland. At *Haileybury*, about two miles and a half to

the south of Hertford, the East-India Company's celebrated college was established in 1806, for the education of young men destined to fill offices in the civil departments in the government of India. There is also in the town of Hertford a branch of Christ's Hospital, London, where about 500 of the younger children of that institution are kept. *St. Albans*, an ancient town, near the Roman *Verulamium*, has an abbey church, which contains the tomb of the celebrated Francis Bacon, Viscount St. Albans, and Baron Verulam. *Ware*, a little to the east of the county-town, is noted for its trade in malt. At *Tring* and *Watford*, both situate on the line of the Grand Junction Canal, there are several silk throwsting-mills; and a portion of the female population of these towns, and that of several other places of the county, find a profitable employment in the manufacture of straw-plait. *Chipping-Barnet*, or *High-Barnet*, situate near the borders of Middlesex, is noted for its cattle-fairs.

§ 17. *Huntingdonshire.*

The ancient town of *Huntingdon*, the capital of the county, is situate on the Great Ouse, and carries on a trade in corn, flour, and malt. It was the birth-place of Oliver Cromwell. *St. Neots* and *St. Ives*, also situate on the Ouse, the former near the borders of Bedfordshire, the latter near those of Cambridgeshire, are inconsiderable in point of population, and with the exception of the manufacture of paper carried on at St. Neots, equally so with regard to trade. The parish of *Stilton*, in which is a small market-town of the same name, situate in the northern portion of the county, has long been celebrated for the quality of its cheese; but much of the article sold under the name of "Stilton cheese," is made in Leicestershire and Rutlandshire.

§ 18. *Kent.*

Canterbury, the ecclesiastical metropolis of England, stands on the river Stour, in a valley covered with hop grounds and plantations, at the distance of 57 miles from London. The streets are well paved and lighted, but the houses are generally of an inferior description. The cathedral, a large and magnificent building, is of great antiquity, and contains many handsome monuments, the principal of which are those of St. Thomas-a-Becket, and Edward the Black Prince. Canterbury was a place of considerable importance in the time of the Romans, and was subsequently the capital of the Saxon kingdom of Kent. *Rochester*, 29 miles from London, is built on the west bank of the Medway, over which there is an ancient stone bridge. The city, which is episcopal in rank, is small but handsome, and possesses a fine cathedral, and an ancient castle, still in good preservation. *Chatham*, on the opposite, or east side of the Medway, may be said to form a continuation of Rochester. It has an extensive dockyard, which affords accommodation for the largest ships of the royal navy; barracks for the royal marines, and regimental depots. The fortifications, which are extensive and of great strength, are inferior only to those of Portsmouth. *Maidstone*, the county town, on the Medway, about 8 miles above Rochester, is handsomely built, and forms the centre of the hop trade. The principal buildings are the parochial church, which is one of the largest in the kingdom, the county jail and the shire hall, where the assizes are held. *Dover* is situated on the south-east coast, at the mouth of a romantic valley nearly surrounded by chalk hills, and is 71 miles distant from London. The town is large and handsome, and the castle, perched on the summit of Dover Cliff, is one of the strongest and best appointed fortresses in the kingdom. The harbour, though not very good, is large and commodious, and is principally used for the packets between England and France. Dover, Hastings, *Romney*, *Hythe*, and *Sandwich*, are called by way of eminence the *Cinque* (five) *ports;* and formerly enjoyed considerable privileges on account of their maritime importance in former ages. They, along with their dependencies, are still under the special charge of a "Lord Warden," whose official residence is at Walmer Castle, near Deal. Hastings belongs to Sussex, the others are on the south-east coast of Kent. *Woolwich*, on the south side of the Thames, 10 miles east of London, the head quarters of the royal artillery and engineers, is a royal arsenal, and has a dock-yard, where ships of the largest class are built for the royal navy. *Deptford*, likewise on the south bank of the Thames, contiguous to, and forming virtually a part of London, possesses another royal dock-yard, established by Henry VIII., and a corporation called the Trinity House, founded in 1515 by Sir Thomas Sport, comptroller of the navy. This corporation has in process of time acquired large property; and is now entrusted with the power of examining and nominating pilots, superintending the lighthouses, buoys, and landmarks, on the coasts of England, regulating the ballasting of ships in the port of London, examining masters of the royal navy, and superintending the mathematical studies of

the youths in Christ's Hospital. The corporation now consists of a master, four wardens, eight assistants, and 18 elder brethren; but, though they still retain their old house at Deptford, where they have an hospital for decayed shipmasters and their wives, their business has been transferred to an elegant building on Towerhill, London. *Greenwich*, continuous with, and on the east side of Deptford, is celebrated for its observatory and royal naval hospital, an asylum for disabled and aged seamen and marines of the royal navy. The hospital stands on the bank of the Thames, a little to the south-east of London, and is a magnificent structure of stone, surmounted by two domes, which are the first prominent objects that attract the attention of travellers when entering London by the river. On an eminence behind the hospital is the Royal Observatory, the point from which the meridians are reckoned by British geographers and navigators. *Sheerness*, a fortified place on Sheppy Island, at the mouth of the Medway, contains a royal dockyard, and extensive docks for building ships of the line. It is also a market town, and contains some good houses. *Margate*, the great resort of the inhabitants of London for sea-bathing, stands on a bay in the isle of Thanet, to the west of the north Foreland. The streets are irregular, but the town contains several handsome squares and elegant buildings, of which the most conspicuous are the assembly rooms, theatre, and public libraries. *Ramsgate*, another sea-bathing station, stands on the east coast of Thanet, and has an excellent harbour, which was formed at a vast expense. *Gravesend*, a considerable town, 24 miles from London, opposite Tilbury Fort, is considered as the termination of the port of London, and is the great rendezvous for outward bound ships. The present out-ports of this important maritime county are five in number. The principal of these are Dover (of which the neighbouring town of *Folkstone* is a sub-port), Rochester, and Ramsgate. The others are *Faversham* and *Deal*; the former of which, and its sub-port *Milton*, stand on creeks opening out into the channel of the Swales, and the latter faces the anchorage of the Downs. The inland towns of Kent, independently of those already noticed, are few and inconsiderable. *Tunbridge*, a very neat town, is delightfully situate in an extensive tract on the banks of the Medway. The hamlet named *Tunbridge-Wells*, situate partly in the parish of Tunbridge, and partly in that of Frant in Sussex, is celebrated for its mineral waters, and has long been a place of fashionable resort in summer.

§ 20. *Lancashire.*

Lancaster, an ancient town, derives its chief importance from its being the capital of the county. It is beautifully situate on a rising ground, the summit of which is occupied by the castle and the church. The river Lune flows on the north of the town, and is crossed by a magnificent bridge. *Manchester*, the centre of the great cotton manufactures of England, stands on the river Irwell, in the south-east quarter of the county, 182 miles north-west of London. The ground on which it is built is nearly a dead level; and from whatever side it is approached, a crowded assemblage of spires, towers, factories, and warehouses, is seen rising with the cloud of smoke which almost continually envelopes it. The houses are generally built of brick, and covered with blue slates. The streets are well paved; and the public buildings and charitable institutions bear testimony at once to the wealth and the misery of the inhabitants. The collegiate church of St. Mary is an ancient Gothic structure, which will probably become the cathedral of the new bishopric of Manchester. This town owes its present greatness to the skill and enterprise with which its manufactures have been conducted. Every branch of the cotton manufacture is carried on in the town and neighbourhood to an enormous extent. Iron and brass founderies are also numerous, as well as chemical works, and a great variety of other branches of industry, either connected with the cotton trade, or required for the comfort and accommodation of its numerous population. The situation of Manchester, in an extensive coal-field, amidst streams of considerable power, which have been rendered still more powerful by the artificial canals formed from them, and its freedom from corporate privileges, have contributed not a little to raise it to the pre-eminence which it now enjoys. The town was incorporated for municipal purposes in 1838, and is now governed by a mayor, aldermen, and council, elected by the qualified Parliamentary voters. In the year 1757 the population of Manchester amounted to 19,600; in 1800 to 84,000; and in 1831 to 187,000. *Salford*, on the west side of the Irwell, is a considerable town, almost continuous with Manchester, but not included within its municipal limits. The two towns communicate with each other by means of three stone bridges. *Liverpool*, next to London the largest sea-port in the kingdom, is situate on the north-east bank of the Mersey, near its mouth, 32 miles west of Man-

in union with the Catholic Church.) In 1825, the Latin Catholics amounted to 5,233,952: the United Greek, only to 624,259. They are placed under the spiritual superintendence of three archbishops, those of Gran, Kolocsa, and Erlau; and of seventeen bishops, of Agram, Bosnie with Sirmien, Esanad, Funfkirchen, Grosswardein, Kaschau, Neusohl, Neitra, Raab, Roseneau, Stein-am-anger, Stuhlweissenburg, Szathmar, Veszprim, Waitzen, and Zeug with Zips; and 6345 priests. They have also 307 canonries, 160 abbeys, 89 archdeaconries, 307 vice-archdeaconries, and 3723 parish churches, besides a number of chapels. The Archbishop of Gran is primate of Hungary, and has an annual revenue of about £35,000 sterling.* The other two archbishops, with several of the bishops have also large revenues; but they are taxed in large annual sums for the singular purpose of keeping the fortresses of Hungary in repair; and at their demise the King appropriates to himself the greater part of what they may have accumulated during their lives. Next in number are the Orthodox Greeks, consisting of about 1,452,516 persons, under the charge of an archbishop at Karlowitz, and of seven bishops in the cities of Bacs, Temeswar, Carlstadt, Packracz, Arad, Ofen, and Werschetz. They have 60 presbyteries, 25 large convents, 1643 churches, 2122 pastors, and 2781 lay ecclesiastics, who form a kind of monks. The Protestant Reformed Church, on the Geneva model, includes a population of 1,251,226 persons, who are almost wholly Magyars, and are under four superintendencies established at Pesth, Papa, Miskolcz, and Debreczin. Under these are 34 synods, 1359 churches, and 1407 pastors. The Lutheran Church consists of 667,945 members, under the charge of four superintendents or bishops, residing in the cities of Presburg, Neusohl, Oedenburg, and Teissholz. Under these are 35 consistories, 487 parish churches, and 518 ministers. Besides these there are a few Armenians and Mahometans; and the Jews have 342 synagogues, with a rabbi to each. Each sect has its separate schools, colleges, and universities; and education is more generally diffused than in many of the other countries of Europe. In most of the sees schools for Catholics are supported by the prelates; and, besides, there are royal academies at Agram, Grosswardein, Kaschau, Presburg, and Raab; and at Pesth there is one of the oldest and richest universities in Europe. The schools for primary instruction in the villages are slightly encouraged; nor do the peasantry discover much inclination for instruction; but in the cities and large towns there are 103 schools for Catholics. The Protestants have schools for primary instruction in each of their parishes. The Calvinists have also burgher schools in the cities, and seven gymnasiums and three colleges at Debreczin, Saros-Patak, and Papa. The Lutherans have gymnasiums and colleges at Eperies, Presburg, Oedenburg, and Kesmark. The Orthodox Greeks have till recently much neglected education; but attempts at improvement have at last been made, and schools have been established at St. Andreas, Alt-Ofen, and Miskolcz. There are astronomical observatories at Ofen and Erlau, chemical and mineralogical institutes at Schemnitz, a military academy at Pesth; and a society was instituted in that city in 1832, under the title of the Imperial Academy of Sciences.

GOVERNMENT. — Hungary is a feudal kingdom, the sovereignty of which is vested in an hereditary King or Queen, and a Diet or Parliament, composed of the magnates or greater nobility and ecclesiastics, and representatives of the minor nobility, citizens, and burghers. The crown is at present vested in the Emperor of Austria; but in the case of the failure of heirs, it falls to be disposed of by the Diet. The constitution is based upon the Golden Bull of King Andreas II., dated in A. D. 1222, and confirmed by subsequent treaties and enactments, which, however, merely secured to the privileged classes their ancient rights, but left the peasantry in a state of servitude. The executive power belongs to the King. He is the source of titles and offices, nominates the higher ecclesiastical dignitaries, and the judges of the courts of law. He makes war or peace, can assemble and dissolve the Diet, and call out the whole military power of the nation. He receives the incomes of all vacant ecclesiastical benefices, and is heir to the property of such noble families as become extinct. He has also the direction of the universities and colleges, and appoints their higher officers from the class of nobles. The appeals to Rome upon the affairs of the Catholic Church can only be made through him; and for a long time past the royal authority has been constantly exercised to limit the number and the causes of such

* Mr. Paget, however, says,—"It is difficult to ascertain the exact amount, but common rumour generally estimates it at £100,000 per annum;—though some reduce it to £80,000, or even £60,000." —I. 190.

applications. And though he may not interfere directly with the management of ecclesiastical affairs among either the Lutherans or the Calvinists, yet he claims and exercises the right of general superintendence. Thus he appoints the places where their synods shall meet, and insists that there shall be present at all such meetings a representative who is not a Romish prelate or priest. Their books also are subjected to a censorship appointed by the government. The King must be of the Catholic religion, and, at his inauguration, must swear to maintain the rights and privileges of the States. Within six months after his accession, he must assemble the States, and in their presence, in the open air, swear to maintain their privileges, to leave the crown of St. Stephen* within the kingdom, and to allow the States to elect a king upon failure of issue, both male and female, of the Emperors Charles VI., Joseph I., and Leopold I. During a minority, the Palatine is guardian of the kingdom; but the King is capable of assuming the exercise of power when he has completed his fourteenth year. The King being resident out of the kingdom, the government is directly administered by the Palatine, with the nominal assistance of a council appointed by the King; but in fact all orders on important matters emanate from the Imperial Government, and pass through the Hungarian State Chancery at Vienna. The constitution to which the King swears at his coronation, is intituled the Golden Bull, and was wrung by the Magyars from their feeble King, Andreas II. It contains, however, one clause, which the King excepts from his oath, viz. the right of the subjects to offer resistance in the case of misgovernment on the part of the King.

The *States* of Hungary consist of—1. The prelates, to which class belong the archbishops, bishops, abbots, and priors of the Roman and Greek churches; 2. The temporal barons and magnates, the high bailiffs of the provinces, and the counts and independent noble proprietors of estates; 3. The nobility or knights, who do not attend personally, but choose two deputies for each county; and, 4. The deputies from the royal towns. Every noble, however, claims the right to appear in person at the Diet, and only submits to be represented, because it is more convenient, but without giving up his right to a direct share in the legislation. The purposes for which the States assemble are, the coronation of the King, the election of a Palatine, the admission to, or exclusion of nobles and cities from their rank, the granting of subsidies and the imposition of taxes, and the framing of new laws, or rather the giving of their assent to such laws as the King may enact. By the constitution the States should be convened every five† years at least, or oftener if pressing circumstances require it; but of these circumstances the King is the judge, as the States are only convened by his summons. The Diet does not assemble in annual sessions, but remains sitting till all the business is finished, so that a new election takes place for every Diet. Formerly a few weeks or months were sufficient for this purpose, but latterly the importance of their business has made them sit for years in succession. The States meet in two chambers, or tables. The Magnates' Table is composed of the Palatine as president, the royal barons and counts, the great officers of state, and lords-lieutenants of counties, who are all named by the Crown, except in a few cases where the office has become hereditary in certain families; the prelates; and the regulists, or titled princes, counts, and barons, of the age of twenty-five years, who are summoned individually. The other chamber, called the States' Table, consists of the deputies of the minor nobility, of the counties, of the free towns, of such of the magnates as cannot, or do not choose, to attend in person, and of the widows of magnates. The deputies, however, of the towns have only the right of sitting and speaking in the chamber, but not of voting; a privilege of which they were deprived by the nobles on account of their subserviency to the Crown. The deputies of the magnates and widows neither speak nor vote. But though the States meet in two chambers, they vote in four distinct bodies, and the absolute majority of those present determine each question in that body. If the King and

* The Magyars made their first appearance in Hungary, A.D. 894, under a leader named Almus; and by the year 900, the people who then possessed it were extirpated or subdued by him or his son Arpad. This chief and his descendants assumed the title of Duke; and in the year 973, Duke Geysa and some thousands of his chief people embraced the Christian faith. Waik, the son of Geysa, assumed at his baptism the name of *Stephen*, and for his success in converting his subjects, and extirpating heathenism, was canonized after his death. He sent an embassy to the Pope Silvester II. from whom he obtained a crown, the one so carefully preserved, with the royal title; and thus commenced the kingdom of Hungary in A.D. 1000. Stephen appointed bishops, and marked out their dioceses; founded numerous churches, convents, and schools. He is said to have likewise given the Magyars a political constitution, but his laws are lost or forgotten. The crown remained in the family of Arpad till the fourteenth century; at length, in 1527, the Archduke Ferdinand of Austria, was elected king; and his descendants have possessed the kingdom ever since.

† Mr. Paget says *three*.—I 172.

three of these bodies settle any point it becomes a law. The sitting of the Diet depends upon the King. During their sitting the deputies used to be maintained at the expense of those who sent them; but by the Diet of 1825 the peasants were freed of this tax. Each county has also a Diet, in which its own affairs are discussed and regulated, and to which appeals may be made from the baronial courts. When the general Diet is to be assembled the summons of the Monarch states the purposes for which it is to meet, to those sub-diets, which have thus an opportunity of discussing the matter beforehand, and of instructing their deputies how to vote; and these are, properly speaking, only delegates sent to express the opinion of their constituents. No project of a new law originates with any of the States; and, in fact, by the general and tacit consent of all parties, the general Diet used to be assembled as seldom as possible. During Maria Teresa's long reign of forty years it was called together only twice; Joseph II. never summoned a Diet at all, but ruled as absolute king; and, during the present century, there was no meeting of the Diet till 1825; but it has assembled regularly since, and has assumed an important place in the government.—(*Paget*, vol. i. ch. 6.)

Each of the fifty-two counties (*varmegye*) into which Hungary is divided, has a separate local administration, and constitutes a kind of State within itself; nor can the general government legally interfere in its affairs, or even execute the laws within its boundaries, except through the county officers, all of whom, except one, are chosen by the people (*i. e.* the landed gentry, who alone constitute the *populus Hungaricus*), every three years. The single exception is the Fo-Ispan, or Lord-Lieutenant, who is the representative of the King, and is appointed directly by the Crown. Except at the triennial elections, or on other great occasions, this officer generally resides in the capital; and the more important of his duties devolve upon the elected Vice-Ispan, or Al-Ispan, as he is more commonly called, or in Latin, Vice-comes, who answers in some respects to the English Sheriff. In the absence of the Fo-Ispan he summons and presides at all the county meetings, corresponds with the central government, and carries its decrees into effect. It is through him also that the deputies at the Diet communicate with their constituents, and receive their instructions. He possesses the supreme direction of the county police, and presides as chief judge in the county courts, besides holding his own courts for the trial of minor offences, and small debt cases. A first and second Vice-Ispan are always chosen, in order that, in case of the illness or unavoidable absence of the one, the other may supply his place. The municipal officers below the Vice-Ispan, and elected by the county, are the Szolga-birok, the Jurassores, the receivers of the State and county taxes, collectors, fiscals, and others, besides a medical officer of health, surveyors, jailors, police officers, &c., who are elected for life. The most important of these is the Szolga-birok or county magistrate. With the assistance of the Jurassores or sworn assessors, he manages the separate districts (*kerulet*), into which each county is divided: his duties extend to the administration of justice in petty cases, the quartering of soldiers, and the superintendence of police. All these officers receive small salaries, varying from £80 that of the Vice-Ispan, to £10 that of the Jurassor. The salaries are not intended as a remuneration for their services, but only as a provision for extraordinary expenses, it being especially stated that none but men of substance, and capable of living on their own property shall be appointed; no man, when chosen, can refuse to serve. The office of Vice-Ispan is considered highly honourable, and is much coveted by men of rank. Four times in the year at least, or oftener if necessary, the Fo-Ispan, or Vice-Ispan, is obliged to call a public meeting (*Markalis-Szek* or *Congregatio*), of all the nobles and clergy of the county. These congregations are both political and municipal. During the sitting of the Diet the questions then before it are here discussed, and instructions as to their votes sent to the deputies. Here too the wants and grievances of the county are debated, and orders sent to the deputies to introduce bills to remedy them. They have the right of corresponding not only with other counties, but even with foreign powers; and are, in short, little less than provincial parliaments. In their municipal or local character, they manage and direct the means of communication, as roads, canals, and the navigation of rivers; assess the taxes, and levy the soldiers ordered by the Diet; provide for the county expenses; assize the price of corn and meat; and in short, perform all the business which the government of a county can require. They have also, among others, two extraordinary privileges, — to disregard the King's orders if they are found by the meeting to be contrary to law; and, to cite before them any noble who leads a scandalous life, and oblige him to reform, or to expel him from the county.

The municipalities of the Royal boroughs or corporate towns are of German origin, and dependent in principle. The municipal body consists of a *Senatus* and a *Kozseg*. The former contains twelve members, from whom are chosen annually the *Polgar-meester*, or mayor, the *Varos-biro*, or judge of the town; and the *Varos-capitany*, or captain of police. The *Kozseg* forms the town-council, from which the members of the senate are chosen. Both of these bodies are self-elected, the members retain their situations for life, and are generally elected, or we might almost say nominated, by the controlling influence of the Crown, and are completely subservient to its wishes and purposes. They are the guardians of the corporate property, and levy taxes to defray their local expenses; they also send deputies to the Diet, but these deputies must be chosen from among the Senators, who are subservient to the Crown; and on this account the Diet has deprived the town-deputies of their votes. Every village likewise forms a community in itself, and is governed by its own elected officers, assesses and collects its own taxes, and generally manages its own affairs; but the Lord of the Manor has, to a certain extent, the same power in the village which the King possesses in the county. The chief officer of the village is the *Biro* or judge, who executes all the magisterial and public duties, aided by a *notarius* to keep the accounts; two assessors to assist in his judicial functions, as *kis-biro* or little judge; and several *haiduks* or town-officers. With the exception of the haiduks, all these officers are paid as well as elected by the peasants; the Biro's salary, though small, is a sufficient inducement to him to take the office, and, during his continuance in it, he is exempted from labouring for his Lord or for the county. — (*Paget*, vol. ii. ch. 2.)

The last Diet closed its sittings in May 1840, after voting 38,000 troops for ten years service, with the usual annual subsidy, and passing several important acts. Commercial tribunals are to be established in nine of the principal towns, with a court of appeal at Pesth, and these will afford to the merchant as speedy and certain justice as he can obtain in any other part of Austria, thus placing one of the greatest obstacles to the commercial relations of foreigners with Hungary in the way of being obviated. The laws have been in most respects assimilated to those of Austria, and all parties are now raised to a legal equality, in commercial and pecuniary transactions, if it be previously stipulated that their differences shall be referred to the new tribunals. A great improvement has also been effected in the condition of the peasants, who are now allowed to free their lands for ever from all feudal services, on payment of a sum of money; in fact to become landowners, a privilege hitherto reserved exclusively to the nobles, and to have their land clear of entail. About 400,000 farms, averaging 40 acres each, have thus become disposable property, and nearly half a million of families have been raised in the social scale. They are no longer liable to arbitrary punishments, and cannot be imprisoned except on conviction before the proper authorities. It has been decreed that in mixed marriages, all the children shall follow the religion of their father, and in case of refusal by the clergy of any denomination to perform the nuptial ceremony, marriage by those of one religion is to be held sufficient, and binding on both parties. The obstacles formerly existing to a change of religion have been removed; it is only necessary now to state the reasons to the civil authorities, and the royal assent is obtained. Concessions have been made in favour of the Jews, but the bill for placing them on an equality with other subjects, after passing both tables of the Diet, has failed to obtain the royal assent. The discussions of the Diet are also now printed; but not the principal debates of the delegates; for as the Government persists in appointing the president of their chamber, the members prefer to have all important matters discussed in committees of the whole house, where they put the president aside and elect their own chairman; and the discussions of committees are not allowed to be published. A commission has been formed for the revision of the criminal laws. Arrangements are likewise making for a redistribution of the land in farms, so as to give the peasant in one lot what he now holds in detached parcels; and also to consolidate the estates of the original proprietors, which will much facilitate agricultural improvement.

The Hungarians are proud of comparing their political constitution to that of Britain; but it more resembles what the British constitution was in feudal times than what it is now. Still the existence of a formally free constitution is what the Hungarians are every day becoming more and more disposed to avail themselves of for the purposes of national improvement, and the amelioration of their social condition. The progressive diffusion of knowledge among all classes through the instrumentality of the numerous educational establishments which are in operation, must be continually

adding to the number of those who desire to be free and unfettered in all their political and social relations; and the day may soon come when all the power of the Emperor will fail to perpetuate the state of subjection in which the great body of the Hungarians have hitherto been kept both by the Crown and the nobles.

FINANCES. — In revenues, as in all other branches of government, Hungary is a totally distinct kingdom, and partakes in no way of the general taxation of the empire. She furnishes by a vote of the Diet an army of 64,000 men, and grants for their support the fixed sum of 5,000,000 florins, or about £530,000 which is raised by a sort of land-tax upon the peasant cultivators. To this sum may be added about 160,000 florins, raised as a toleration-tax from the Jews; about 150,000 florins paid from the episcopal benefices for the support of fortifications; and 16,000 florins levied on the Zips towns.* These form the whole amount of the direct taxation, in the collection of which no officers of the Crown are employed; but the county courts, composed of the nobles of each county, raise it by their own officers, and transfer to the royal receivers. Besides these, however, Hungary furnishes some portion of the indirect imperial revenues, under the heads of customs, stamps, lotteries, post-office, and salt monopoly; but, upon the whole, her fiscal contributions, considered with reference to her numerical population, are very far below that of the German and Italian provinces. — (*Turnbull's Austria*, II. 357.) The taxes are divided into two classes, the *cassa militaris*, or military assessment, and the *cassa domestica*, or local assessment. The Diet has the right of voting the amount of the military assessment, and the proportion to be borne by each county, but the assessment and collection is made by the counties, municipalities, and village communities themselves; who also, as already mentioned, have the management, collection and control of the local taxes, which are levied for, and applied to, their own local purposes. But this military cess, which is all that is under the control of the Diet, amounts to less than one-sixth part of the public revenues of the kingdom, the other five-sixths consisting of indirect taxes levied by the royal authority, without the consent or control of the Diet. Nearly two-thirds of the whole amount of indirect taxes are levied upon salt, not only without the consent of the nation, but in opposition to its remonstrances; but the Government obstinately maintains it, and will probably continue to do so till the nobles consent to bear their share in the public burdens of the State. Of the amount of the local taxes it is difficult, if not impossible, to obtain an account. The cassa militaris amounts to about £530,000 sterling; and the whole of the public or general taxes together to less than £3,500,000. — (*Paget*, II. ch. 2.)

ARMY. — The regular or standing army in time of peace, amounts to 64,000 men; but in the event of war that number may be readily doubled at the call of the Crown by an extraordinary levy called the *insurrectio*, in which all the nobles are obliged to take part. The army is kept up partly by voluntary enlistment, and partly by forced contingencies supplied by the counties and towns, according to their extent and population.

PRODUCTIVE INDUSTRY. — Throughout Hungary agriculture among the peasantry is in a very primitive state. In the poorer districts the ground is allowed to lie fallow every other year, and is rarely manured; while the implements with which it is cultivated are very rude. Rotation of crops is never thought of. Barley is rarely found in any part of the country, and green crops, except among a few agriculturists, who have adopted a better system, are completely neglected. The manufactures are also still in an infant state. Till recently the principal occupation of the people, besides agriculture, was confined to the making of very coarse cloths, various kinds of woodenware for furniture, musical instruments, and toys. The spinning of flax is a domestic manufacture carried on in the family of almost every peasant. There is also a considerable quantity of woollen cloth made throughout the kingdom, but it is of coarse quality, and adapted only for the peasants; extensive manufactories have lately been established at Gacz, Illlawa, Kaschau, Munkatsch, Lipersdorf, Mosztenie, and Presburg, chiefly by Germans. At these places machinery has been introduced, and the cloth cloth made is of fine quality, and well finished. Silks and ribbons are manufactured at Pesth, Grosswardein, and Presburg, but only to a small extent. The leather of Hungary is much valued, but the quantity is not equal to the consumption; and the hides of the cattle are still sent to Germany, though there are numerous tanneries at Presburg, Funfkirchen, Ratko, Zips, and Debreczin. Paper is manufactured to a considerable amount, but is generally of very bad quality. Ironmongery articles are

* There are 16 free towns in the county of Zips, inhabited by an ancient German colony, under the peculiar jurisdiction of their Grafs, and an administrator who resides at Iglo.

manufactured at Zips, Abouigvar, Sarosch, Zemplin, Verschod, and the county of Gomerer. The best steel is made in Diosgyvor, and the vicinity of Neusohl; and the swords and other weapons manufactured in the different hardware districts are of excellent quality, though of clumsy and awkward forms. Green glass is made in different parts of the kingdom; the sugar-refiners supply the domestic consumption of that article; snuff and tobacco are manufactured almost exclusively from plants raised in the country. The soap is very good, and made mostly at Debreczin, where there are 78 manufactories of that article. Linseed oil, oil of turpentine, corn spirits, cordials, especially rosoglio, and a medicine for wounds named Hungary balsam, refined saltpetre, and pearl ashes, are the other principal products of Hungarian industry.

COMMERCE. — Hungary has no outlet except Fiume, or through the other Austrian States, so that the inland foreign trade of the kingdom is entirely dependent upon the caprice of the Imperial government, which, besides, deriving little revenue directly from the country, surrounds it with custom-houses where duties are collected on every article that passes. The very high rate of carriage, occasioned by the bad state of the roads, is however a greater obstruction to foreign trade than even the imperial customs. The principal foreign trade of Hungary is with Poland Silesia, and the north of Italy, sending wine to the two former, and corn to the latter; but with more distant countries its only intercourse is by the port of Fiume, which communicates with the interior of the kingdom by the only good roads it possesses. The introduction, however, of steam navigation has made the Danube available for commerce; and when the physical obstructions in the upper part of its course, and the political questions respecting its mouth are removed, or modified, the Hungarians will have such an outlet for their produce as promises an indefinite extension to the trade of the kingdom. Hungary abounds with exportable natural productions, as copper, iron, lead; coal of excellent quality; salt in great abundance and of fine quality; vast stores of timber, fit for every purpose; hemp of better quality than that produced in Russia; hides, tallow, wool, corn, and other agricultural produce; and wines of various kinds; while, on the contrary, it is in want of every article of manufacturing industry. The central point of the inland trade is Pesth, where at the four annual fairs, the concourse of people is so great, that the prices settled there regulate in a great degree those of the other parts of the kingdom. From that centre the trade diverges into four great branches, namely—1. Towards Austrian Germany by Raab, Presburg, Komorn, and Oedenburg; 2. Towards Galicia, through Kaschau, Eperies, and Leutschau; 3. To Transylvania, Moldavia, and Wallachia, through Debreczin, Ezegedin, and Temeswar; and, 4. To the Turkish dominions beyond the Danube, through Neusatz and Semlin. In all these towns annual fairs or markets are held, which are frequented by vast numbers of people from all the neighbouring countries; and there are, besides, in Hungary, 1600 places where annual fairs of minor importance are held. Though the roads are bad, yet great facilities to trade are afforded by the rivers, several of which are navigable for vessels of considerable burden. The principal commodities exported are the raw produce of the soil; the greatest amount is in live cattle; the next in value are corn, tobacco, wine, hides, and wool. The chief imports are colonial wares, linen, cotton, and woollen articles for clothing, and a few foreign luxuries. The greater part of the trade is carried on through the medium of the Jews, who, from their command of ready money in a country where that commodity is scarce, enjoy peculiar facilities.—(*Paget*, I. 132.)

ADMINISTRATIVE DIVISIONS. — The kingdom of Hungary is divided into four great provinces or circles, and two dependent kingdoms, all of which are subdivided into *varmegye* (Ger. *gespans*), or counties. It also includes five districts with peculiar privileges; as stated in the following table: —

Counties.	*Cities and Towns.**
1. CIRCLE ON THIS SIDE OF THE DANUBE.	
Pesth,	Open or Buda, Pesth, Waitzen, Keszkemet, Gross-Koeroes, St. Andreas, Kolotscha.
Bacs,	Baja, Theresienstadt (*Szabadka, Theresianopel*), Zombor, Neusatz (*Neo Plants, Uj-Videk*), Bacs, or Balsch.
Neograd,	Balassa-Gyarmath, Loschonz, Gatsch-Tugar.
Sohl,	Neusohl (*Beszterczе-Banya, Banska-Bistricza*), Herrengrund, Bries, Sliacs.
Honth,	Sagh (*Ipoly-Sagh*) Schemnitz, Puganz.
Gran,	Gran (*Strigonia; Esztergom.*,
Bars,	Kremnitz (*Kœrmoetz*), Kœnigsberg, Bars.

* The names within ( ) are the Hungarian and Slavonic names.

Neutra,.....Neutra *(Nitra)*, Skalitz, Holitsch, Leopoldstadt, Miava, Privitz.
Pressburg,.....Pressburg *(Posony, Prespureck)*, Modern, Tyrnau *(Nagy-Szombath, Tyrnavia)*, Grosschutzen, Szent-Janos.
Trentsin,.....Trentsin *(Trentschin)*, Teplitze, Puchow, Rajetz.
Thurotz,.....St. Martin *(Szent-Marton.)*
Arva,.....Also-Kubin, Trsztenna, Lipnitzna, Jablonka, the Castle of Arva.
Liptau,.....Szent Miklos, Rosenberg, Deutsch-Liptsch.

2. CIRCLE BEYOND THE DANUBE.

Wieselburg,.....Ungarisch-Altenburg *(Magyar-Ovar)*, Wieselburg, Neusiedl, Ragendorf.
Oedenburg,.....Oedenburg *(Soprony)*, Eisenstadt *(Kismartony)*, Forchtenstein, Matterdorf, Ruszt, Kapuvar.
Raab,.....Raab *(Gyor; Janarin)*, Szigeth, Martinsberg.
Komorn,.....Komorn *(Komarom)*, Acs, Dotis.
Stuhlweissenburg,...Stuhlweissenburg *(Szekes-Fejervar)*, Moor.
Veszprim,.....Veszprim, Palota, Papa, Vasarhely.
Eisenburg,.....Stein-am-anger *(Szombathely; Sabaria)*, Guns *(Kaszeg.)*
Salad,.....Szala-Egerszeg, Keszthely.
Schumeg,.....Kaposvar, Szigethvar.
Tolna,.....Szexard, Hegyesz, Simonsthurm.
Baranya,.....Funfkirchen *(Pecs)*, Bellye, Mohacs.

3. CIRCLE ON THIS SIDE OF THE THEISS.

Zips,.....Leutschau *(Loecse; Levocza)*, Koesmark, Goelnitz *(Golniça)*, Szmolnitz or Schmolnitz, Neudorf *(Iglo.)*
Goemoer,.....Gross-Steffelsdorf *(Rima-Szombath)*, Pleisnitz, Rosenau, Czetneck, Dobschau, Gœmœr.
Hevesch,.....Erlau *(Eger; Agria)*, Gyœngiœs, Mezœtur.
Borschod,.....Miskolz, Dios-Gyoer.
Torna,.....Torna.
Aba-ujvar,.....Kaschau *(Kassa, Kassovia.)*
Saroseh,.....Eperies, Sovar, Nagy-Saros, Bartfeld.
Zemplin,.....Ujhely or Satoralilia-Ujhely, Zemplin or Semplin, Saros-patak, Sodrog-Keresztur, Tokay.
Unghvar,.....Unghvar, Szerednye, Szobrantz, Felso-Remete.
Beregh,.....Bereghszasz, Munkacs, Podhering, Beregh.

4. CIRCLE BEYOND THE THEISS.

Marmarosch,.....Szigeth, Rhonaszek, Huszt.
Ugotsch,.....Nagyszœllœs, Halmi.
Szathmar,.....Nagy-Karoly, Nagy-Banya (Uj-Varos), Felso-Banya, Szathmar.
Szaboltsch,.....Nagy-Kallo, Nyiregyhaza.
Bihar,.....Gross-Wardein *(Nagy Varad)*, Dioszeg, Debreczin, Bellenyes.
Bekesch,.....Gyula, Bekes, Fuzes-Gyarmathy, Szarvas, Csaba, Oroshaza.
Csongrad,.....Szegedin, Vasarhely, Szentes.
Csanad,.....Mako, Mezohegyes.
Krasso,.....Lugos, Doganacska, Oravicza.
Temesch,.....Temesvar, Versetz, Lippa.
Torunthal,.....Nagy-becskereck.

5. KINGDOM OF SCLAVONIA (CIVIL PART.)

Veroecze,.....Esszek, Diacovar, Veroecze.
Possega,.....Possega, Pakracz, Daruvar.
Syrmien,.....Vukovar, Irek, Kamenitz.

6. KINGDOM OF CROATIA (CIVIL PART.

Agram,.....Agram (Zagrab), Karlstadt.
Warasdin,.....Warasdin.
Kreuz,.....Kreuz, Kopreinicza.

7. PARTICULAR DISTRICTS.

Hungarian Shore,...Fiume, Buccari, Porto-Re, Novi.
Jazygie (Jaszag),....Jaszbereny.
Little Kumania,.....Felegyhaza, Halas, Maisa, Dorosma.
Great Kumania.....Kardzag-Uj-Szallas, Madaras.
Haydnck Territory,..Bœszœrmeny.

Cities and Towns.

BUDA (called by the Germans OFEN (Oven), in allusion to the heat of its mineral waters), the capital of the kingdom, is situate upon the right bank of the Danube, in N. lat. 47° 29′, and E. long. 19° 2′, 135 miles E.S.E. of Vienna. As a town, it has little to recommend it but an imposing appearance from the river, being built partly at the base, and partly along the ascent of a range of low but picturesque hills, which open into a sort of glen; but it contains the Palatine's palace, the arsenal, the palaces of several magnates, and the observatory of the university of Pesth, built upon the Blocksberg. The town is commanded and overlooked by the castle, a grave, stern, and feudal-looking pile, in which is deposited the palladium of Hungary, the crown consecrated by Pope Sylvester, and presented by him to the King St. Stephen, in A. D. 1000. Buda communicates by a bridge of boats with *Pesth*, an elegant modern town, in a low sandy plain, built on a regular plan, with every attention to architectural propriety; containing wide, clean, well-paved streets, shops amply furnished with goods, many handsome public edifices, and a fine quay, which extends for a mile along the side of the Danube. The bridge of boats is about to be superseded by a suspension bridge, the erection of which will require nine years; the cost is estimated at £500,000; which is to be repaid by a toll, levied on all passengers, even nobles. The width of the river, at the ordinary level of the water, is 1408 feet; the total length of the suspended platform will be 1227 feet, in three divisions, separated by two massy towers or piers, rising 117 feet above the surface of the water.—(*Paget*, I. 220.) Pesth is a fashionable resort of the Magyar nobility, many of whom pass the gay season here rather than at Vienna; and it is evidently the wish of the nation to make it their capital, and to support it as such. It contains a University, one of the most richly endowed in Europe; the Hungarian Learned Society (*Societas Erudita Hungarica*) and several other literary and scientific institutions; and is noted for its four annual fairs, which are attended by at least 20,000 strangers from all parts of Hungary and the adjoining countries, and at which business is transacted to the value of more than

£1,000,000 sterling. The great plain round Pesth bears the name of *Rakos-mezo*, or the Field of Rakos; and is celebrated in Hungarian history as the scene of many of those wild Diets, where all the nobles used to assemble in council, armed and mounted as for war, which was not unfrequently the termination of their discussions.—Population of both towns, about 130,000. Buda is noted for its baths, which are supplied by copious hot springs of water strongly impregnated with sulphur: and close behind the town is a long range of hills, famous for red wines, which are very full-bodied, and much resemble Burgundy. At the distance of four miles from Buda is *Alt-Buda*, on the site of the ancient Aquincum, where Attila, king of the Huns, held his court; and on a hill, on the right bank of the Danube, 18 miles N. of Buda, and nearly opposite to Waltzen, are the ruins of the royal castle of *Wissegrad*, long a stronghold of the race of Arpad, and converted by King Mathias Corvinus into what was called in his day "an earthly paradise."

PRESSBURG (Hung. *Poson*, Slav. *Bespurek*) is a pretty town, with an air of much cleanliness and comfort, situate on the left bank of the Danube, 35 miles east of Vienna. It was for a long time the capital of Hungary; and is overlooked by the royal castle of the Hungarian kings, boldly situate on the last peak of the lower Carpathians. Since 1784 it has ceased to be the capital; but the diet still assembles there, and the solemn inauguration or coronation of the king takes place upon a hill in the neighbourhood. It possesses an academy, or minor university, and several other institutions; has a bridge of boats, 330 paces long, across the Danube, leading to some fine and shady public walks; and though much deserted, and falling to decay, it still contains about 41,000 inhabitants. A few miles up the river lies the pretty village of *Theben*, with a romantic castle, the common Sunday resort of the citizens of Presburg.

The other principal towns and remarkable places of the kingdom we have arranged in their respective circles, numbered as in the table.

1. *Tyrnau*, or *Nagy-Szombath*, 30 miles N.E. of Presburg, is noted as a great wine mart, and has a population of 7000. *Neutra*, or *Nitra*, a small episcopal city, with 4000 inhabitants, 50 miles E.N.E. of Presburg. About 10 miles S. of Neutra is *Urmeny*, the residence of the Count Hunyadi, distinguished for his agricultural improvements. *Keszkemet*, situate in the midst of immense downs covered with sand and shells, 50 miles S.E. of Pesth, is noted for soapworks, tanneries, and markets, and has a population of 34,000. *Theresienstadt* (*Theresianopel*, or *Szabadka*), 100 miles S. by E. of Pesth, is a large town, or mass of villages, with 40,000 inhabitants, possessing manufactures of cloth and boots, tanneries, and a great trade. *Zenta*, on the Theiss, S.E. of Theresienstadt, is noted for a great victory gained by Prince Eugene of Savoy, and Duke Charles of Lorraine, over the Turks, in 1697. *Waitzen*, an episcopal city, near the Danube, 20 miles N. of Pesth, with a fine cathedral, built on the model of St. Peter's at Rome, a military school, a deaf-and-dumb school, the Academia Ludovica, and several remains of Roman and mediæval antiquities, and 10,000 inhabitants. *Kolotscha*, situate in the midst of extensive marshes, not far from the left bank of the Danube, 70 miles S. of Pesth, is an archiepiscopal city, with 4000 inhabitants, and contains a fine cathedral, a gymnasium, a college of piarists, and a considerable library. *Zombor*, 53 miles S. of Kolotscha, is noted for an Illyrian pedagogic school, and its great trade, which is much facilitated by the Franzens canal.—Population, 18,000. *Neusatz* (*Nyvotts*, *Neo-Planta*, *Uj-Videk*), upon the north or left bank of the Danube, 170 miles S. by E. of Pesth, at the mouth of a canal which affords a communication into the very heart of Hungary, is a bustling trading town, with a population of 17,000. It communicates by a bridge of boats with Peterwardein, and is the centre of the trade carried on between Turkey and south-eastern Germany. *Neusohl*, 80 miles N. of Buda, is a royal and episcopal city, noted for the great quantity of copper produced by the process of cementation, and for the manufacture of utensils.—Population of town and district, 10,000. Near it is a great manufactory of arms, and at some distance are the royal forges of *Rhonitz*, where immense quantities of charcoal are also prepared; and also the mineral waters and baths of *Sliacs*, some of which are cold, and some tepid; and contain oxide of iron, with carbonic acid, salts of lime, magnesia, and soda. The cold springs are considered highly tonic; the warm as alterative and tonic.—(*Paget*, I. 371.) *Schemnitz*, 20 miles S.W. of Neusohl, is noted for rich mines of gold and silver, and for its royal academy or school of mineralogy, where about 200 students are educated at the public expense.—Population, above 22,000. *Kremnitz*, 10 miles W. of Neusohl, has rich mines of gold and silver, and a mint, to which all the gold and silver of the mining districts is brought to be coined.—Population, 10,000. In the valley of the Waag, N.E. of Presburg, are:—*Trentchin*, or *Trentsin*, a very ancient, but ruined fortress, and a decaying town, with mineral springs; and *Pischtian*, or *Pistjan*, and *Tepla*, *Teplitz*, or *Toplitz*,* two of the most fashionable watering-places in Hungary; and at *Demenfalva*, in the county of Liptau, 98 miles N.E. by E. of Presburg, is the *Drachen-hohle* (Dragon's hole), a vast cave or grotto, full of bones of gigantic animals.† *Gran*, or *Esztergom*, the ecclesiastical metropolis of Hungary, is a small episcopal city on the right bank of the Danube, 23 miles N.W. of Buda. It is noted for its baths, and a magnificent, but still unfinished cathedral, begun by the archbishop in 1821.—Population, 4000. But, though to the south of the river, its county is in this circle; while Komorn, which is situate on the north bank, is assigned to the southern circle.

2. *Guns* or *Kæszæg*, a small town with 5000 inhabitants, 60 miles S. by E. of Vienna, is the seat of the tribunal of appeal for the circle. *Oedenburg*, or *Soprony*, near the south-west side of the Neusiedler See, is noted for the industry of its inhabitants, its great cattle markets, its excellent wines, its coal-mines, and a Lutheran lyceum.—Population, 12,000. Near it is *Esterhaz*, the magnificent castle of Prince Esterhazy, but much neglected since the Prince took up his residence at *Eisenstadt*, a town of 3000 inhabitants, 12 miles N.W. of Oedenburg, and 27 from Vienna, where he has also a fine chateau and garden. In this neighbourhood also is *Frakno*, or *Forchenstein*, a small fortress belonging to his Highness, where the family treasures are kept.‡ *Raab*, an episcopal city, with a noted academy, 40 miles S.E. of Presburg.—Population, 14,000. S.S.E. of Raab, 14 miles, is *St. Marton*, a benedictine monastery upon a high point among the hills. *Komorn*, at the confluence of the Waag with the Danube, nearly midway between Buda and Presburg, in the midst of a vast plain, is a strong fortress of the first class, and as it has never yielded to the efforts of a besieger, the Hungarians deem it impregnable. It is besides a flourishing town, with considerable trade, contains two theatres, and has 17,000 or

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* *Tepla*, or *Toplitz*, is a Slavonic word, signifying *a bath*, and therefore scarcely a distinguishing name. This place is called the Tepla of Trentsin, from which it is distant 10 miles.

† For a description of this cave, see *Paget's Hungary and Transylvania*, I. 142.

‡ The possessions of the Esterhazy family about the Neusiedler See, were first granted to them by the Emperor Ferdinand II. in 1622, for the services rendered by the Count Nicolaus Esterhazy, which were greatly instrumental in securing the Austrian family on the throne. The palace of Eisenstadt was built in 1663 by the Prince Paul Esterhazy of Galantha, palatine of Hungary; but has since undergone many alterations and repairs. The Prince's flock of merinos is always kept up to the number of 250,000, with a shepherd for every hundred. His estates are said to equal the kingdom of Wirtemberg in size, and to contain 130 villages, 40 towns, and 34 castles; yet his annual revenue is said only to amount to £150,000, though capable of considerable increase.—*Paget*, I. 45.

18,000 inhabitants. At the distance of an hour's drive is *Babolna*, near which a royal stud is maintained on a great scale, intended for the improvement of the breed of the Hungarian horses; and from which the whole of the imperial cavalry might in a short time be remounted. It is a sort of military colony, where all the inhabitants are soldiers, their rulers officers, and yet where every necessary art and trade are practised. *Datis* (*Tata*), 12 miles S.E. of Komorn, is noted for manufactures, corn-mills, saw-mills, and thermal waters, which are much frequented.—Population, 9000. *Stein-am-anger* or (*Szombathely*), a small episcopal city of 2500 inhabitants, 32 miles S. of Oedenburg, contains a fine church, a seminary, a gymnasium, and a museum of Roman antiquities. *Stuhlweissenburg*, the ancient *Alba Julia*, 40 miles S.W. of Buda, is an episcopal city, where several of the kings of Hungary have been crowned, and where they are buried, but contains nothing remarkable.—Population, 13,000. *Keszthely*, at the west end of the Balaton lake, is noted for the fine castle of Count Festetis, and a school of agriculture established by that nobleman.—Population, 4000. At the N.W. side of the lake, near Tihany, is *Fured*, a watering place, which has come into notice within a few years. *Funfkirchen*, (Five Churches) or *Pecs*, 105 miles S.S.W. of Buda, is an episcopal city, with a cathedral considered the oldest in Hungary.—Population, 9000. In the neighbourhood are rich coal-mines. *Mohacs*, a large village on the Danube, 25 miles E. of Funfkirchen, is near the scene of the great battle fought between the Christians and the Turks, A. D. 1526, in which the Hungarians were defeated, and their king, Lewis II. with seven bishops, 500 nobles, and 20,000 soldiers killed. *Folvar*, and *Tolna*, towns on the right bank of the Danube, between Buda and Mohacz; the best tobacco in Hungary is produced at Tolna, where it was first planted in 1576. *Veszprim*, *Vasarhely*, and *Papa*, three considerable towns to the north-west of the Balaton Lake; Veszprim contains a handsome episcopal palace crowning a steep hill, which was once occupied by one of the most important fortresses of Hungary; it was for a long time in possession of the Turks, and still contains an elegant minaret as a memorial; Papa has a fine church, a flourishing Calvinistic college, and a fine castle of Prince Esterhazy, to whom the town belongs. *Ruszt* or *Rust*, a small royal free town on the west side of the Neusiedler See, with only 150 houses, but it sends members to the Diet. Behind the town rises a small hill, which constitutes its chief wealth; for it is here the celebrated Ruszter wine is grown, one of the best of the many good wines of Hungary.—(*Paget*, I. 40.)

3. *Eperies*, 140 miles N.E. of Buda, is the seat of the tribunal of appeal for the circle, and the see of a Greek bishop. A Lutheran college, the saline of *Sovar*, and the celebrated opal-mine of *Czervenicza*, in its neighbourhood, make it a place of some importance.—Population, 9000. *Bartfeld*, 25 miles N. of Eperies, a small town with 4600 inhabitants, has a gymnasium, a great pottery, and well frequented mineral waters. *Kæsmark*, among the hills, 40 miles N.W. of Eperies, is noted for its great linen manufactures, and for a Lutheran lyceum.—Population, 5000. *Rosenau*, 40 miles S.W. of Eperies, is an episcopal city, with linen bleachfields, mines of copper, iron, antimony, and lead, and public baths.—Population, 5000. *Agtelek*, 15 miles S. of Rosenau, a small town, near which is the large grotto of *Baradla*, formed in a limestone rock, subdivided into several caverns full of superb stalactites, and traversed by three brooks. It is often visited by foreigners as well as Hungarians, whose admiration is excited by the vastness of its halls, the huge proportions of its columns, and the mysterious windings of its long passages.—(*Paget*, I. 473.) *Schmoelnitz*, 30 miles S.W. of Eperies, is noted for its industry, hydraulic machinery, mint, and mines of silver and copper.—Population, 5000. *Murany*, 20 miles W.N.W. of Schmœlnitz, an ancient fortress on a lofty rock, frequently mentioned in Hungarian history, but now in ruins. *Erlau* or *Eger*, 70 miles N.E. by E. of Pesth, an archiepiscopal city, with considerable trade, cloth manufactures, and baths.—Population, 17,000. Its wines are also of great celebrity. *Kaschau*, 130 miles N.E. of Pesth, the capital of Upper Hungary, is an episcopal city, with an academy, and other educational institutions, a theatre and an arsenal. It contains also considerable works of various kinds, and carries on a flourishing trade with Poland.—Population, 9000. *Saros-Patak*, in the county of Zemplin, S.E. of Kaschau, is a large well-built town, noted for its cloth-works and quarries, a Catholic college, a superior Catholic school, and a fine library.—Population, 8000. *Tokay*, on the Theiss, 120 miles E.N.E of Pesth, is noted for its wines.—Population, 4000. *Mischkolcz* or *Miskolz*, 80 miles N.E. of Pesth, is a large well-built town, with a great trade in wine, corn, and leather; it has also a Catholic and a Calvinistic gymnasium.—Population, 28,000. In its neighbourhood is the flourishing village of *Dios-Gyor*, situate in a delightful valley, which is celebrated through all Hungary for its forges, which produce the best iron and steel in the kingdom; and for its glass-works and paper-mills. *Bereszk*, the chief town of the county to which it gives its name, is noted for the prodigious size of the vegetables and trees which grow in its neighbourhood.

4. *Debreczin*, 120 miles E. of Pesth, is one of the principal manufacturing and commercial towns in Hungary; but is rather an assemblage of villages than a town. It has been called "the largest village in Europe;" and its wide unpaved streets, one storied houses, and the absence of all roads in its neighbourhood, render it very unlike what a European associates with the name of town. It is, however, the place where the Magyar character may be most advantageously studied; for the language is spoken here in its greatest purity; the national costume is worn by rich as well as poor; and those peculiarities which a people lose by much intercourse with others are still prominent at Debreczin.—(*Paget*, II. 20.) The principal articles of manufacture are coarse cloth, and clothing for the peasantry, tanneries, boots, pottery, and soap. It is the great mart for the produce of the north and east of Hungary, and has four yearly fairs, which attract great crowds of strangers, and at which the Transylvanians supply themselves with colonial produce and the fineries of Vienna. It is particularly noted for its horse market, and may even be considered as the capital of eastern Hungary, for it is the seat of the tribunal of appeal for the circle, contains a library, a Calvinistic college, the principal scientific institution in the empire belonging to that sect, and so extensive in its course of study as almost to be entitled to rank as a university.—Population, 70,000. *Kardszag*, 27 miles S.W. of Debreczin, a mud-built market-town with 11,000 inhabitants, the capital of Great Cumania. *Szigeth*, near the head of the valley of the Theiss, 230 miles E. by N. of Pesth, is the chief place of the Salt administration, and the entrepot of the immense products of rock-salt dug in the neighbourhood of the village of *Rhonaszek*.—Population, 7000. *Neustadt*, (*Nagy-Banya*, or *Uj-Varos*), 210 miles E. of Pesth, a pretty little town of 4000 inhabitants, with rich mines of gold, silver, and lead, a mint, and mineral waters. The principal mine is in the *Krutzberg*, which was wrought by the Romans, and still yields a considerable amount of gold and silver, from a matrix of porphyry. *Grosswardein* (*Nagy-Varad*), a well-built town, 140 miles E. by S. of Pesth, is the residence of a Catholic bishop and a Greek bishop; has a large academy, an archi-gymnasium, a Catholic cathedral, fine fortifications, an episcopal palace, several convents, and twenty-two churches.—Population, 18,000. *Szarvas*, upon the Kœrœs, 84 miles S.E. by E. of Pesth, is a large town, with a school of practical industry.—Population, 14,000. *Csaba*, in the same county, is only a village, though its population exceeds 20,000.* *Temeswar*, the

* The long and fierce wars which Hungary sustained with Turkey, and the exposure of these open districts to perpetual invasion, first induced the inhabitants to congregate into heaps; and the habits then contracted have never since been laid aside. Accordingly, in the great plains, near the borders of Hungary, there are no such things as villages and hamlets, far less detached dwellings, to be seen anywhere; but at remote intervals you come upon towns, of the veriest huts, where dwell 6, 8, 10, and sometimes even as many as 30 thousand peasants together.—*Gleig's Germany, Bohemia, and Hungary, in* 1837, III. 300.

capital of the Banat,* 170 miles S.E. of Pesth, is one of the finest cities, and strongest fortresses, but also one of the unhealthiest places in the empire.—Population, 14,000 *Versetz*, or *Werschitz*, 45 miles S. of Temeswar, is noted for a great trade in wine and silk.—Population, 16,000. *Szegedin*, on the Theiss, 100 miles S.E. of Pesth, is a large town with manufactures of tobacco, soap, cloth, boots, a philosophical institute and of the Piarists, and 32,000 inhabitants. *Vasarhely*, 20 miles N.E. of Szegedin, a town with 2500 inhabitants, situate near the vast marshes traversed by the Theiss. *Alt Arad*, on the Marosch, 25 miles N. of Temeswar, is the residence of a Greek bishop, with a gymnasium, a Wallachian pedagogic institute, the greatest cattle-market in Hungary, and 5000 inhabitants. Near it is the important place of *Neu Arad*.

5. *Essek*, 150 miles S. by W. of Buda, the seat of the tribunal of appeal for the three counties of Slavonia, is of importance for its commerce, and still more for its fortifications, and the immense barracks and casemates said to be capable of containing 30,000 men. A superb causeway leads to *Bellye*, a lordship belonging to the Archduke Charles, where a wine, called *Villaner Wein*, regarded as the Burgundy of Hungary, is made.—Population 10,000. In the neighbourhood is a new bridge across the Drave. *Vukovar*, and *Kamenitz*, are both considerable towns on the right bank of the Danube.

6. *Agram*, or *Zagrab*, 195 miles S.W. of Buda, consists of three towns situate on the amphitheatric slope of a range of well wooded hills, and is the residence of the Ban, or viceroy of Croatia, and of a bishop; it has an academy, a gymnasium, a musical society, and an extensive trade.—Population 17,000. It contains besides a fine cathedral, and several monasteries; and the bishop's revenues are said to amount to £15,000 a year. *Karlstadt* is a small fortified city, on the Kulpa, 35 miles S.W. of Agram; and is connected by good roads with Fiume, Segna, and Carlopago.

7. *Fiume*, the capital of the Hungarian Littoral, is a small picturesque seaport town, with 6500 inhabitants, and a good harbour on the Adriatic, 53 miles S.E. of Trieste, and 270 S.W. of Buda. The new part of the town is built with considerable elegance, and contains several fine buildings. Without the town is a building of the Sugar Company, one of the largest establishments of the kind, originally created by a royal privilege, but ruined when the privilege was withdrawn. Fiume is a free port, and has some manufactures of tobacco, paper, and rosolio, but its commerce is said to be very insignificant, being confined almost exclusively to rags, staves, corn, and tobacco. It is connected with Karlstadt in Croatia, by the *Louisenstrasse*, or *Via Ludovica*, a superb road 89 miles long, passing over mountains and ravines, and formed by a joint stock company of five individuals, at the cost of £203,000 sterling. The road was opened in 1820. The neighbourhood of Fiume is delightful. Overhanging the town are the remains of an ancient castle, and near it is the spot, marked by a column, where the holy house of Lorretto, borne hither by angels from Nazareth, remained for three years and seven months. It is still a great resort of deluded pilgrims. *Buccari* and *Porto Re* may be considered as appendages to Fiume, from which the former is distant about five miles, and the latter two or three more, to the south-east. Buccari is an oval landlocked basin, surrounded by precipitous hills, with a depth of 20 to 24 fathoms in the middle, and 12 at its entrance, which faces S.S.W. On its eastern side, at a few yards distance from the shore, fountains of fresh water bubble up with great force, and form a series of little freshwater whirlpools in the midst of the saltwater. Porto Re is also a landlocked basin with a depth of 14 fathoms at its narrow entrance which faces west, and is only half a mile from the entrance of Buccari. It affords a perfect shelter from every wind. The Hungarians have a strong desire to make it their national naval arsenal, but it is too small for such a purpose, and is absolutely without fresh water.

§ 2. *Government of Transylvania.*

(German, *Siebenburgen*; Magyar, *Erdely-Orszag.*)

Transylvania lies to the south-east of Hungary, adjoining Wallachia and Moldavia, and has an area exceeding 20,000 square miles. Its surface is very diversified, consisting of alternate tracts of mountain and valley, intermixed with numerous small hills; the changes of temperature consequent upon changes of wind are frequent, and, occasionally, very great. The winter is in general exceedingly severe; while the summers are so hot as to produce the grape and the water-melon in the open air. The soil is poor, and has hitherto been little cultivated, but it is well watered, and finely adapted for the growth of the vine; the chief productions are maize and vines, in warm situations; wheat, oats, and barley on the higher grounds. The forests have been and still are very extensive, occupying nearly 4,000,000 of acres, or a third part of the country, and containing timber of the finest quality. The mines are numerous, and, though not very profitable, give employment to many thousands of people. The richest gold mines are those of *Nagy-Ag* and *Szekerem*, 10 miles from Dera, in the south-western part of the province; they produce about 150 marks of gold and 750 of silver yearly; and are particularly interesting as being the richest in tellurium of any in Europe, and indeed the place where that metal was first discovered. There are also volcanic rocks and mineral springs; and at *Budos*, in Szeklerland there is a cave which produces highly concentrated carbonic acid gas, mixed with a very small proportion of sulphurated hydrogen, which is used by the peasantry as a vapour-bath. The manufactures are generally in a rude state, and can hardly be otherwise so long as the country remains destitute of conveyance by water, or of good roads. The people consist of four principal races, besides Jews, Gipsies, Greeks, and Bulgarians. These are *Magyars*, in the north and west; *Szeklers*, along the eastern frontiers; *Sachsens*, in the south; and *Wallachs*, or *Wallachians*, who, though they form one-half of the population, have no fixed allotments of territory, but are most numerous in the central and eastern districts. The first three races only are represented in the Diet. One of the most remarkable circumstances connected with the country is the existence for many centuries of a small Sachsen or German State, surrounded by Hungarian, Slavonic, and Wallachian nations. The Saxons or Germans of Transylvania seem to have been settled in the country since the eleventh or

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* The *Banat* is a district in the south-eastern corner of Hungary, between the Theiss, the Maros, and the Danube, and comprising the three counties of Temeswar, Krasso, and Torontal. It is not a hundred years since the Turks were in possession of it; and it was not till the close of last century that it was entirely free from Moslem incursions. It was left by the Turks in a wild and savage state; and contained immense morasses which tainted the air, and made it really, what a French writer has called it, "the strangers' tomb." But the philanthropic Emperor, Joseph II., determined to render it equally populous and civilized with the rest of Hungary. To tempt settlers the land was sold at very moderate prices; Germans, Greeks, Turks, Servians, Wallacks, nay even French and Italians, were brought to people this luxuriant wilderness. The soil, a rich black loam, hitherto untouched by the plough, yielded the most extraordinary produce. Fortunes were rapidly made; and, at the present day, there are some of the wealthiest of the Hungarian gentry, who were, half a century ago, poor adventurers in the Banat. The climate in summer approaches nearly to that of Italy; but the winter, though less inclement than in the rest of Hungary, is still too long and severe for the olive or the orange. Even in summer the nights are sometimes intensely cold.—(*Paget*, II. 150.)

the twelfth century, and to have been invited thither by one of the Kings of Hungary, to occupy the deserts to the east of his kingdom, and to defend it on that side from barbarians. They now enjoy the blessings of civil liberty in a greater degree than the people of most countries, and participate, by means of their representatives in the Transylvanian Diet, in the political freedom of the Magyars. The Sicules or Szeklers are a rude and ignorant people, and inhabit a mountainous district of the country along the south-eastern frontier, which, though fertile, sometimes fails to produce food enough for its inhabitants. They are apparently of the same family as the Magyars, for their language, features, and character are the same; but they were settled in this country long before the Magyar invasion of Pannonia under Arpad, in the tenth century. Transylvania has four established religions, but the prevailing one is that of the Greek Church, whose tenets are professed by nearly three-fourths of the people; while the Protestants amount only to 400,000, and the Catholics to the half of that number. Unitarianism was introduced into Transylvania by Isabella, daughter of the King of Poland and wife of the first Zapolya; from her, when regent, the Unitarians obtained equal privileges with other Christian sects, and, for some time, Unitarianism was the religion of the Court. But it is now almost entirely confined to the middle and the lower classes; and it is in the mountains of the Szeklerland that it has retained the greatest number of followers. Their total number in Transylvania is reckoned to be about 47,000; and they have a college at Klausenburg attended by about 230 students. The political constitution is nearly the same as that of Hungary, and the Diet possesses similar powers: the Austrian Government, however, with their usual base policy, were always tampering with them; and in 1835, they completely suspended and superseded them by arbitrary rule. The public revenue is about £500,000 sterling; the annual produce of the gold mines is estimated at 2500 marks, equal to £91,500 sterling; and of the silver, at 5000 marks, or £12,500 sterling.

Transylvania contains 25 counties or *Sedes*, and 4 districts, arranged in the three following general divisions:—

	Towns.
1. MAGYARLAND, (*Magyarok-resze*) divided into 11 counties and 2 districts.	Klausenburg, Thorenburg, Ebesfalva, or Elizabethstadt, Karlsburg, Abrud-Banya, or Gross-Schlatten, Zalathna, Nagy-Enyed, Deva, Gyalar, Nagy-Ag, Szekeremb, Varhely, Szamos-Ujvar, or Armenienstadt.
SZEKLERLAND, (*Szekelyek-resze,*) 5 counties.	Maros-Vasarhely (Neumarkt), Ud-Varhely, Giorgico-Szent-Miklos, Illyefalva.
SACHSENLAND, (*Szaszok-resze,*) 9 counties and 2 districts.	Hermanstadt, Schœsburg, Mediasch, Muhlenbach, Bisztritz, Kronstadt (Brassow, Kruhnen), Rosenau, Nagy-Sink, Fekete-Halom (Zernest), Langendorf.

Towns.—1. KLAUSENBURG (*Kolosvar* of the Magyars, *Klus* of the Wallachians), situate near a gorge of the little Szamos river, 210 miles E. by S. of Pesth, is a small city, but of some importance as the seat of the general government of Transylvania, and of the Magyar portion of the Transylvanians. It possesses a Catholic lyceum, approaching nearly to a university, a gymnasium, colleges of nobles, of Calvinists, and of Unitarians. — Population, 21,000. *Karlsburg*, or *Carlsburg* (*Alba-Julia, Gyula-Fejervar, Weissenburg*, and *Belograd*) 60 miles S.W. of Klausenburg, is a small town on a plain, but contains a handsome fortress, with a fine cathedral built by John Hunyadi, and containing his tomb, a mint, observatory, and library. It is the see of the Catholic bishop of Transylvania, and contains in its district the richest gold mines in the empire. — Population, 6000. *Abrud-Banya*, 24 miles W.N.W of Karlsburg, is a handsome mining town, in the midst of the wildest natural scenery. *Nagy-Enyed*, 25 miles N. of Karlsburg, a burgh of 6000 inhabitants, with a celebrated academical college, considered as the principal educational establishment of the Calvinists, and of higher repute for general education than any other in Transylvania. In the same neighbourhood are:—*Verœspatak*, noted for rich mines of gold and silver, which were worked by the Romans, and are still very productive; and *Eutum*, noted for basalts of an extraordinary form. *Varhely* (*Gridischtje* or *Gredistye*) 53 miles S.W. of Karlsburg, and not far to the eastward of the Irongate pass into Hungary, is a village in the great valley of Hatzeg, in the county of Hunyad, built on the site of Zarmise-gethusa, the capital of the ancient Dacians, and the residence of their King Decebalus. It was taken by Trajan, and on its site the Romans afterwards built *Ulpia Trajana* It still contains the ruins of an amphitheatre, and many antiquities are occasionally found. At *Vayda-Hunyad*, 20 miles N. by E. of Varhely, is the ancient castle of the greatest man Transylvania ever produced, Hunyadi-Janos, or John of Hunyad (in Latin Joanne Huniades), who was governor of Hungary during the minority of King Ladislaus VI. in the middle of the 15th century, and the father of King Matthias Corvinus. He was himself the reputed son of King Sigismund by a Wallack girl of the valley of Hatzeg, and received from his father the name of Hunyadi, with the town of Hunyad, and 60 surrounding villages.—(*Paget*, II. p. 328.) *Thorenburg* (*Thorda*), 20 miles S.E. of Klausenburg, a considerable town, 12 miles from which are the salt-mines of *Maros-Ujvar*, the richest in Transylvania. — Population, 7000. *Szamos-Ujvar* is inhabited by Armenians, from which circumstance it obtained its German name of *Armenienstadt*.

2. *Maros-Vasarhely*, (*Neumarkt*) the capital of the Szeklerland, 50 miles E. by S. of Klausenburg, the seat of the highest legal tribunal in Transylvania, has a Catholic gymnasium, a Calvinist college, a cabinet of mineralogy, and a fine national library bequeathed to his country by Count Teleki, which contains about 80,000 volumes, and is kept in the finest building in the town. — Population, 10,000. *Schœsburg*, (*Segesvar*) 30 miles S.E. of Maros, has manufactures of cloth and cotton thread, and 6000 inhabitants. *Szent-Miklos* has a fine Armenian church. *Ud-Varhely*, in Szeklerland, is a considerable town, with three churches, a castle, a college, and handsome town-house. *Sepsi-Szent-Gyorgy*, a smart little town, with handsome houses, and large public buildings, the head-quarters of the Szekler border hussars. *Keszdi-Vasarhely* contains a military school for the education of the children of the Szekler infantry, founded by the late Emperor Francis, and supported partly by a public grant and partly by the Szeklers themselves; but the management is entirely in the hands of Government.

3. *Hermanstadt*, 280 miles E.S.E. of Pesth, is the chief town of the Sachsenland, and, in a financial point of view, of all Transylvania, and the head-quarters of the commander-in-chief of the Transylvanian portion of the military frontier. It is also the see of a Greek bishop, and contains two gymnasiums, a fine national museum, with rich collections of pictures, medals and minerals, and a considerable library. The overland trade of the town was formerly extensive, but it has now almost disappeared, owing probably to the extension of steam navigation on the Danube. — Population, 18,000. *Kronstadt*, situate at the extremity of a valley, in the south-eastern corner of the country, is the most populous, most commercial, and most industrious town of Transylvania. It is the seat of a Chamber of Commerce, composed of the wealthiest Greek merchants, who carry on business to the extent of more than half a million sterling a-year. It has a printing-press, a Lutheran gymnasium, a principal normal school, and other literary establishments.—Population, about 36,000. *Bisztrix*, 60 miles N.E. of Klausenburg, a considerable town, is noted for its linen manufactures, tanneries, soap-works, and commerce. — Population, 5000. To the S. by E. of Hermanstadt is the mountain-pass of the *Rothenthurm* (*Redtower*), through which the river Aluta rushes down to the plains of Wallachia, and which is one of the most romantic of the valleys connecting Transylvania and Wallachia.

§ 3. *Government of the Military Frontier.*

The Military Frontier is a long and narrow tract of country, extending from the Bukowine in the east to the shores of the Adriatic on the west. The climate, the state of agriculture, and the degree of civilization, are nearly similar to those of the adjacent provinces. When the successes of Prince Eugene had obliged the Turks to cede this country to Austria, a constitution adapted to a frontier district was framed for it, and has continued in force ever since. Its fundamental principle is to enable the inhabitants to defend themselves, by accustoming them to the use of arms, and to give personal service in the field in lieu of taxes and land rents. Every man is liable to military service when called on; and has assigned to him a certain portion of land, which is cultivated by his family; but the ground belongs to Government, and the occupants are merely tenants in common. They form, in short, a great military colony, where both their civil and military affairs are managed by a regular gradation of military officers, assisted by the requisite civil functionaries, to manage their financial and economical business; the whole line being under the charge of a commander-in-chief, whose head-quarters are at Peterwaradein. But the fortresses, and castles, along the frontier, such as Peterwaradein, Hermanstadt, Semlin, Brod, Gradisca, &c are occupied by garrisons from the regular Austrian army, each with its distinct commandant and peculiar jurisdiction. There is, besides, a corps of Watermen or Pontooners, called the Tschaikisten corps, who inhabit a district of about 20,000 inhabitants, near the confluence of the Theiss with the Danube, where a large body of men, whose head quarters are at Titue, is constantly enrolled for service in the management of flotillas and the passage of the rivers.

The government is divided into counties, each of which is required, even in time of peace, to keep under arms two battalions of 1200 men each; while in time of war the levy is increased to four battalions; and, in a case of exigency, the Emperor has the right to order out the whole male population. In this case all between the ages of 18 and 36 are absolutely at the disposal of the State; all above 36 and below 18 down to 12 must arm to defend their own homes; and if the active battalions should be marched away into Italy, or elsewhere abroad, the frontier duty would still be performed by the old men and boys. The acting battalions are chosen by ballot, and are always ready at any moment to take the field, but in ordinary circumstances they assemble to manœuvre, or exercise as regiments, only one month in the year, and receive pay only for the days they are actually on duty, living during the rest of the year at their own homes. But every man in his turn is obliged to take the outpost duty upon the frontiers, along the military cordon established to protect the country from the predatory excursions of the Turks, or the entrance of the plague. Along the whole line, from the Bocche di Cattaro to Galicia, a range of guard-houses has been erected, sufficiently near to communicate with each other, and when a river intervenes they are built on pontoons. Each guard-house is large enough to contain twelve men, who keep a sharp look-out during the day from its top, and at night push forward their sentries, and so dispose them that each shall be within easy hail of those to the right and left. Behind this chain are the guard-houses of the officers, furnished with bells and other means of alarm, whereby, in cases of extreme danger, the inhabitants along the whole line might be under arms in less than four hours. No traveller is allowed to cross the line without applying to the nearest station; and, during the prevalence of the plague or in time of war, he is liable to be shot if he do not immediately reply to the sentinel's challenge by standing still, and answering the customary interrogatories. The consequence of this extreme vigilance is, that no commercial intercourse takes place between Austria and Turkey, but at certain points fixed upon for the purpose; and that individual adventurers or illicit traders can only pass to and fro by eluding the notice of the guards, or forcing the sentries.

The government is divided into four generalates, viz. 1. *The united generalate of Karlstadt-Waradin and the ban of Croatia*, divided into eight regiments, and including the towns of *Agram*, *Segna or Zeng*, *Carlopago*, *Belovar*, *Plasky*, *Petrinia*, *Hostainixca*; 2. *The generalate of Slavonia*, divided into three regiments and one battalion of Tschaikistes, and including the towns of *Peterwaradein*, *Semlin*, *Karlowitz*, *Brodt*, *Old Gradisca*, *New Gradisca*, and *Tittel*; 3. *Generalate of the Bannat* or *Banat*, divided into two regiments, and including the towns of *Temeswar*, *Pancsova*, *Karansebes*, *Weiskirchen*, and *Mehadia*; and 4. *The generalate of Transylvania*, divided into five regiments, and including the towns of *Hermanstadt*, *Kezdi-Vasarhely*, &c.

Towns.—*Peterwaradein* (*Petervaraszvardin* of the Magyars) is a strong fortress, built on an isolated hill, on the south or right bank of the Danube, 170 miles S. by E. of Buda. It is a most formidable military position, its batteries sweeping every approach by land or water; and is so extensive as to be capable of receiving a garrison of 10,000 men. It communicates with Neusatz, on the opposite bank, by a bridge of boats; and both towns together contain about 20,000 inhabitants. *Semlin* is a poor, mean, deserted-looking town,* on the left bank of the Save, opposite Belgrade, situate in the midst of a marsh, and, though garrisoned by a battalion of infantry, is no longer a fortified place. It contains, however, a quarantine establishment, as a protection against the plague. *Karlowitz*, or *Carlowitz*, a considerable town, most picturesquely situate at the foot of a group of vine-clad hills, 7 or 8 miles S. of Peterwaradein, is the see of a Greek archbishop, who is primate of all the Austrian Greek subjects.—Population, 6000. *Tittel*, 20 miles E. of Peterwaradein, on the right bank of the Theiss, not far from its confluence with the Danube, has several shipbuilding yards, and an arsenal, in the latter of which are preserved several Roman antiquities dug up in the territory; and the remains of the works raised by the Romans to defend the point of the peninsula between the Theiss and the Danube are still to be seen. *Orsova*, or *Orschova*, a small town, or "pretty little village," on the left bank of the Danube, on the border of Wallachia, is a steam-boat and quarantine station, likely to become of some importance as a commercial place, from its position near the rapid called the Irongate, and at the head of the maritime portion of the navigable channel of the Danube. It is a station of the border custom-house and quarantine establishments. *Mehadia*, 20 miles N. of Orsova, is a small town, famous for its mineral baths, which are supplied by springs impregnated with sulphurated hydrogen gas, at the temperature of 133° Fahrenheit, and are frequented by people from all the adjacent countries. At the distance of a few miles is a fine Turkish aqueduct at the village of *Topletz*. *Pancsova*, not far from

* *Gleig's Germany, Hungary, and Bohemia, in* 1837, vol. iii. p. 273. Balbi's account of it is somewhat different:—"Semlin devenue depuis quelques annés tres important par son commerce avec la Turquie; on pourrait même la regarder comme la troisieme ville de tous les pays Hongrois sous le rapport commercial; pop. audessus de 9000 ames." Mr. Elliot gives the population at 3000; and Mr. Paget, 10,000; "it contains," says Mr. P., "some tolerable streets in the interior, but the part near the Danube looks as miserable as need be; indeed, the greater portion visible from the steam-boat is the gypsey town, a collection of mud huts on the side of the hill. But Semlin is one of those localities which nature herself has marked out for the position of a town. It occupies the angle formed by the junction of two vast rivers, the Danube and the Save, and it becomes necessarily a depot for supplying the wants of the people occupying their banks."—(*Paget*, vol ii. p. 90) The increase of steam-navigation on both rivers will thus, in all probability, soon make Semlin one of the principal commercial towns in Hungary.

the left bank of the Danube, 14 miles E. by N. of Semlin and Belgrade, is a considerable trading town with 9000 inhabitants. *Karansebes*, 47 miles N. of Orsova, is a small market town, to the east of which is the *Irongate pass* into Transylvania, and through which a Roman military road formerly led into Dacia. Seven miles north of the pass, and 18 N.E. of Karansebes, is *Ruskberg*, the seat of a great iron foundry belonging to Messrs. Hoffman, where 2500 persons are actively engaged, not only in working iron, but also mines of silver, lead, and copper, which have been recently discovered there. *Brod*, a fortress on the left bank of the Save, under the walls of which a town of 2000 inhabitants has grown up, 45 miles S.W. of Eszek. *Neu-Gradiska*, 35 miles W. of Brod, is a town with 3000 inhabitants, in an extremely picturesque situation, within a mile of the frontier.

§ 4. *Dalmatia and Albania.*

The kingdom of Dalmatia consists of a long narrow tract of mountainous country, and a number of large islands along the north-eastern coast of the Adriatic Sea, containing altogether an area of 5000 square miles. The ranges of mountains on the mainland are extensive and covered with forests; but there are also beautiful and fertile valleys; and the agricultural products, maize, vines, olives, and silk, are proofs of a genial climate. The country is rich in iron mines and marble quarries, but as yet they have been little wrought. Such parts of the forests as adjoin navigable rivers have been made available for shipbuilding; and no part of Europe abounds more with good harbours. The kingdom is divided into four circles, as stated in the following table:—

Circles.	*Towns and Islands.*
Zara,.....	ZARA, Nona, Obrovazzo, Knin, Sebenico, Scardona; *the islands* of Arbe, Pago, Grossa, Coronata, Mortero, Zuri.
Spalatro,.....	Spalatro, Trau, Clissa, Imoschi, Sign, Almissa, Fort Opus, Macarsca; *islands*—Bua, Brazza, Lesina, Lissa, Solta, Torcola.
Ragusa,.....	Ragusa, Old Ragusa, Stagno, Gravosa; *islands*—Curzola, Meleda, Lagosta, Giupana, Mezzo.
Cattaro,.....	Cattaro, Perasto, Risano, Budua, Castelnovo, Pastrovichi.

Towns.—ZARA, the capital of the kingdom, is situate on a strait formed by the island of Ugliano and the mainland. It is the seat of a tribunal of appeal, of an archbishop, noted for its maraaquins, and important for its industry, commerce, fortifications, and harbour. It possesses a central seminary for the ecclesiastics of Dalmatia, a lyceum, a gymnasium, a college, a midwifery school, and about 5000 inhabitants. *Nona*, a small but ancient town, is noted for its great establishment for the culture of tobacco. *Obrovazzo*, is a large village, which has become of some importance, in consequence of its connexion with the splendid road which the Emperor has formed in order to facilitate the communication between Dalmatia and the Military Frontier. This road will rival those of the Simplon and the Splugen; the culminating point rises 3184 feet above the level of the Adriatic. *Sabenico*, a small seaport town with 3000 inhabitants, and the see of a Catholic and of a Greek bishop. It has extensive fisheries; and is celebrated for the beauty of its situation, the boldness of the roof of its cathedral, formed of large marble slabs, for its fort St. Nicholas, the work of San Micheli, for its ancient civilization, and for the magnificent cascade of the Kerka, one of the finest in Europe. *Trau*, is a very small town in one of the finest situations in Dalmatia, and in one of the best cultivated cantons.

Spalatro, the most commercial and most populous town of Dalmatia, is the see of a bishop, has a harbour, and 8000 inhabitants. The circuit of the town corresponds with the walls of the palace built by the Emperor Diocletian, when he took up his residence, after his abdication, at *Salona*, the ruins of which are close by Spalatro. A museum has been formed for preserving the antiquities dug up in the ruins, and Spalatro has, besides, a gymnasium and a philosophical institute. The fort of *Clyssa* defends the passage of the mountains, and forms the principal land defence of this town, which is the entrepôt of the trade between Bosnia and Dalmatia. *Knin* and *Sign* are two small fortified places; and *Opus*, a fortress on the borders of immense marshes.

Ragusa or *Dubrownik*, lately the capital of a democratic republic, is a seaport town on the Adriatic, with a considerable trade, and a population of 6000, who are chiefly employed in shipbuilding and soapworks. In the neighbourhood is the fine harbour of *Gravosa*, in a delightful situation, surrounded with villages and the villas of the principal citizens of Ragusa. *Cattaro*, the seat of a bishop's see, is a small town of 3000 inhabitants, has a fine natural harbour, protected by vast barracks, and fortifications which occupy all the neighbouring heights. It has a considerable maritime trade; and is noted in the history of the French empire as the *Bocche de Cattaro*.

Islands.—*Pago*, a large island with extensive salines, and a town of the same name. *Arbe*, which supplies wood for building *Isola Grossa*, rich in wine, oil, and salt, but without water. *Coronata*, which produces the best cheese in Dalmatia. *Solta*, which produces excellent honey. *Bua*, rich in asphalt. *Brazza*, important for its extent, population, and wine: it contains the town of *Milna*, where a number of ships are built. *Lesina*, the largest of the islands, contains Lesina, a small episcopal city, with a harbour. *Curzola*, noted for shipbuilding. *Lissa*, with fine harbours, strong fortifications, and rich fisheries. *Meleda*, a large island noted for precipices and funnels, from which sounds proceed that sometimes alarm the inhabitants. It is by some antiquaries believed to be the *Melita* of St Paul. *Lagosta* is noted for a grotto, for pretended Phœnician inscriptions, and its natural ramparts.

PRUSSIA.

Astronomical Position—Between 49° and 56° North latitude, and 60° and 23° East longitude.

Dimensions.—This kingdom consists of several detached portions separated at wide intervals by other States, and therefore no exact estimate can be made of its absolute length and breadth. A straight line, drawn between the north-eastern and the south-western extremities, measures 790 miles; and the greatest breadth, which extends from the south-eastern extremity of Silesia to the north-western coast of Pomerania, measures 420 miles. The superficial area measures 5077.41 square German geographical miles, or about 107,894 square English miles.

Boundaries.—*Northern:*—Baltic Sea, Mecklenburg, Denmark, Hanover. *Southern:*—Austrian Empire, Saxon States, Bavaria, Hessia. *Eastern:*—Russian Empire. *Western:*—France, Belgium, Holland.

General Aspect.—The greater part of the kingdom being included within the limits of Germany, it is unnecessary to repeat here what has been stated respecting the general aspect of that country. The western detached portion extends along both sides of the Lower Rhine; the eastern comprises a portion of the great plain which extends through the centre of Europe, from the North Sea to the Ural mountains. There are, however, considerable inequalities in the soil and surface. The greater part of the soil is sandy, generally level, and often covered with heaths, such as those of Minden, which cover 10,000 acres; those of Lippstadt, 20,000; and the still larger wastes of Senner and Fuhling; and there are many sandy plains, the expense of bringing which into cultivation would not be repaid by the value of their productions. East Prussia abounds with large lakes and morasses; and even in the fertile province of Magdeburg, the bog of the Dromling covers more than 100,000 acres. Nearly one fourth of the whole surface is occupied by forests; and only certain portions near the rivers, or in other peculiar situations, can be considered as fertile, or even tolerable soils. The most productive corn land is in the vicinity of Tilsitt; some other districts of East Prussia, and the greater part of Posen, are also productive. In West Prussia, the district of the Netz, the country round Marienburg, Danzig, and Elbing, are excellent corn countries. That part of Silesia to the east of the Oder forms a large slightly undulating plain; but the western portion is more unequal, and rises, towards the south-west, into high mountains. It contains also several extensive meadows and marshes. In Brandenburg, the land is low, and generally sandy, and so level that a great many marshes and small lakes are formed by the overflowing of its rivers. The province abounds in forests of fir, pine, oak, beech, and ash; but some districts are celebrated for the quality and quantity of their grain. In Pomerania, the soil is almost entirely formed of land gained from the sea, and of alluvial deposits; a great part of it is covered with forests and heaths, and it is only the banks of the rivers and lakes that can be cultivated with advantage. In Saxony, Magdeburg, and Thuringia, the soil is favourable for all kinds of grain; and these provinces may be considered as the granaries from which the less fertile districts obtain their supplies of corn. The western part of the kingdom is far less productive than the eastern; a few only of the Westphalian provinces are favourable for agriculture; the districts most eminent for fertility are in the vicinity of Minden and Paderborn, the borders of the Soester, and the circles of the Lieg and the Wupper. In the Rhenish provinces, the neighbourhood of Juliers, Bonn, Cologne, Coblenz, Kreusnach, Bacharach, and the banks of the Meuse, are tolerably fertile.

Gulfs, Bays, Straits.—The Baltic is the only sea that washes the Prussian coasts; and the only part of it which seems to bear a specific name is the *Gulf of Danzig*, at the mouth of the Vistula; but there are along the coast several collections of water which may be considered as either lakes or arms of the sea; the water is fresh, but they communicate with the sea by navigable openings or straits. The largest of these are the *Curische-haf*; the *Frische-haf*; and the *Stettiner-haf*. The Curische-haf is situate on the coast of East Prussia, is 66 miles in length, and varies in breadth from 30 at the southern end to less than one at its mouth. It is separated from the Baltic by the *Curische-nehrung*, a long narrow tongue of land; and its bed is so shallow and full of sandbanks, that it is only navigable for boats, and is, besides, exposed to frequent storms. It receives its name from the Cures, an ancient people who dwelt upon its banks; and indeed the fishermen of the lake still call themselves by the same name. The *Frische-haf* extends along the south-east side of the Gulf of Danzig, and is about 60 miles in length, and from 6 to 15 in breadth. It is separated by a chain of sandbanks from the sea, with which it communicates by the *Gatt*, a strait which is 3000 feet wide, but in many places not

more than 12 feet deep, and the lake itself is still shallower. It receives the waters of the Pregel, and two branches of the Vistula. The *Stettiner-haf*, divided into the *Gros-haf* and the *Kleine-haf* (Large Bay and Little Bay), is situated at the mouth of the Oder, and separated by the islands of Usedom and Wollin from the Baltic, with which it communicates by three channels or straits. The water is quite fresh: the lake extends 28 miles in length from east to west, with a medium breadth of five miles. *Pudzig Bay* is formed by a long narrow tongue of land, which projects about twenty miles into the middle of the Gulf of Danzig.

ISLANDS.—*Rugen*, off the north-western coast of Pomerania, is about 30 miles in length and 20 in breadth; but its numerous creeks and bays give it a very irregular and singular form. It is separated from the mainland by a channel, which is at one place only a mile wide; and is partly surrounded with several smaller islands, the principal of which are *Hiddensee*, *Humantz*, and *Ruden*. The northern part of Rugen is of a chalk formation, and the peninsula of *Jasmund* is almost entirely formed of that substance. The central and other districts are covered with argil, sand, and gravel, and in some parts with red loam of a very fertile quality; so productive, indeed, that the industry of the people has been for a long time confined to agriculture and the rearing of cattle, many of which are exported to the continent. The people live together in small towns, the principal of which is *Bergen*, situate, as the name imports, upon a height, which commands a view of nearly the whole island. *Usedom*, at the mouth of the Oder, is still more irregular in its form than Rugen; the breadth being in some places less than half a mile, and in others more than 12 miles. It is partly covered with hills of sand, and with forests, which contain wild boars, stags, and other animals. The soil is not fertile, and the people are more employed in fishing than in agriculture. A strait 800 yards wide separates it from *Wollin*, a somewhat smaller, but more fertile island, with an alluvial soil and rich pastures, which yield good herds of cattle, the principal wealth of the inhabitants.

RIVERS.—See Rivers of Germany, page 394.

The VISTULA (German, WEICHSEL; Polish, WISLA) rises in Austrian Silesia, flows through Russian Poland, and the Prussian governments of Marienwerder and Danzig, passing by Cracow, Warsaw, Thorn, Culm, and Graudenz. At Montau it divides into two arms, the eastern of which, named *Nogat*, falls into the Frische-haf; and the western, still bearing the name of Vistula, again divides into two branches, one of which likewise falls into the Frische-haf, while the other flows onward past Danzig into the Baltic sea at Weichselmunde (Vistula mouth.) The Danzig channel having recently (1840) become obstructed with ice, four miles east of that city, the river has at that point cut a new channel for itself to the sea. Within a few days, the width was already 2000 feet, and the channel will probably become permanent. The Vistula becomes navigable at Cracow; but at some places lower down, even so far as Thorn, it is fordable. Its principal affluents are the *Wieprz*, *Bug*, and *Narew*, *Pilica* and *Bzura*, in Poland; the *Drewenz* and *Ossa*, in Prussia.

The PREGEL, formed by the union of the *Inster* and the *Angerap*, in the government of Gumbinnen, flows through the government of Königsberg into the Frische-haf. It receives on the left the *Alle*, which passes Heilsberg.

The NIEMEN, or MEMEL, rises in the Russian territory, runs through East Prussia, past Tilsitt, and divides into two branches, the *Russe* and the *Gilge*, both of which flow into the Curische-haf.

The *Stolpe*, the *Persante*, and the *Rega*, are small streams which flow through the governments of Cöslin and Stettin, into the Baltic sea.

LAKES.—The number of lakes is said to exceed 1000, many of which are from 10 to 20 miles in length. In East Prussia there are 300; in West Prussia, 160; and in Brandenburg, 680. Many of them, however, have been contracted by artificial embankments, and the recovered soil appropriated to agricultural purposes. At present they supply vast quantities of fish. The principal of them are the *Spirding-see*, and the *Mauer-see*, in the government of Gumbinnen, and the *Leba*, in the government of Cöslin, or Köslin.

CLIMATE. — The climate may be described generally as temperate and healthy, though, to this general statement, there are many exceptions. On the borders of the Baltic the winters are severely cold, and the weather changeable, raw, and foggy. The central provinces of Posen, Brandenburg, Silesia, Saxony, and all the western parts of the kingdom, possess a milder and less variable climate; but the atmosphere of Brandenburg, though mild, is humid, subject to frequent variations of temperature, and often exposed to violent storms from the south and east. On its sandy plains the summer heat is very oppressive, and, from the abundance of stagnant water, the climate is unhealthy; but as the country rises towards the mountains the atmosphere improves in coolness and salubrity. Silesia suffers much from rainy autumns and snowy winters. The atmosphere is in many parts salubrious; but, owing to the dense forests, and the elevation of the ground, the southern districts are exposed to long and severe winters. The climate in the northern part of the country is milder; but the lakes and marshes infect the air, and render it in many places unwholesome. The Westphalian and Rhenish provinces partake of the general climate of that part of Germany in which they are situate.

VEGETABLE PRODUCTIONS AND ANIMALS. — See Germany.

PEOPLE. — The greater part of the Prussian subjects are Germans, divided into the two great branches of High and Low; but in Silesia, Posen, and Prussia, the people are of Slavonic origin, and speak various dialects of the Slavonic language. In East Prussia there are about 50,000 Lithuanians, who have a peculiar language of their own. The *Wenden*, or Vandals, have also a distinct language; they are mostly settled in Pomerania, and the districts of Leignitz and Kassubon in East Prussia, and a few in Brandenburg. Jews are to be met with in every part of the kingdom, and principally in the province of Posen; the total number amounts to about 170,000. The *Pruczi* or *Prussians*, from whom the kingdom derives its name, were an ancient people, of a mixed Wendo-Gothic extraction, who dwelt along the coast of the Baltic between the Vistula and the Niemen; but their language has long since fallen into disuse, and

the people themselves are no longer distinguishable. Being heathens, they were invaded, reduced to subjection, and forcibly christianized by the Teutonic Knights, whose possessions became the nucleus of the Prussian monarchy, to which these despised Pruczi have given their name.

POPULATION. — In the year 1819 the population of the kingdom amounted to 11,084,993; and at the close of the year 1834 to 13,510,030, being an increase of 21¾ per cent. In 1838, it amounted, as stated in the subsequent geographical and statistical table, to 14,271,530. There are in the whole kingdom 129 towns, containing upwards of 5000 inhabitants, 89 containing from 5000 to 10,000; 20 containing from 10,000 to 15,000; 12 containing from 15,000 to 30,000, and 8 exceeding 30,000.

RELIGION. — The professors of all religions enjoy freedom, and nearly equal rights, though the Evangelical religion may be considered in some respects as that of the State. Lutheranism proper, and Evangelism, are professed by the great majority of the people in East Prussia, Brandenburg, Pomerania, and Saxony; Popery, by the majority in Westphalia, the Rhenish provinces, and Posen; while Popery and Evangelism nearly divide the population of Silesia and West Prussia. Without taking into account the smaller sects and the Jews, it may be said that three-fifths of the inhabitants of Prussia profess the Evangelical religion, and two-fifths the Roman Catholic. According to a law made in 1817, the Protestant clergy in each province are subjected to a synod composed of all the superintendents, who meet once or twice a year, to deliberate on the affairs of the churches of the province. They also superintend the schools, and take especial cognizance of the religious education given in them; and their decisions, after being approved of by the consistory of the province, are transmitted to the Minister of the Interior. The Roman Catholics are under the spiritual superintendence of two archbishops, one for the eastern province, and one for the western; they are distributed into nine dioceses and 3200 parishes. Gnesen is the metropolitan see of the eastern, Cologne of the western province. The annual stipend of the archbishops is about £1720 sterling, that of the bishops about £1150, besides perquisites; none of them can be elected without the sanction of the king. Public pilgrimages out of the kingdom are entirely prohibited; and none of greater extent than one day's journey are allowed within it. The Mennonites are excused from military service, but, in lieu of it, are obliged to contribute to the support of the military academy at Culm. Jews enjoy the same rights and privileges as Christians, with some slight exceptions, and are liable to conscription.

EDUCATION. — In no other country is the system of education so complete; and in none is the instruction of all classes so carefully provided for. The law imposes upon parents the strict obligation of sending their children to school, unless they can prove that they are giving them a proper education at home; and care is everywhere taken to furnish to the poor the means of complying with this law, by providing their children with the things necessary, and even with clothes. Every parish is bound to have an elementary school, and every town one burgh school or more, according to its population. Above these are gymnasiums, somewhat resembling in their character the high schools and grammar schools of Britain; and in these institutions, classical learning is pursued as preparatory to admission into the universities, of which there are seven, in the cities of Berlin, Breslaw, Halle, Bonn, Königsberg, Munster, and Greifswald. In order to provide the schools with proper masters, normal schools have been instituted, in which persons intending to become teachers receive instruction, not only in the requisite branches of education, but also in the theory and practice of teaching. Pecuniary assistance is also given to a certain fixed number of poor scholars of good promise. The lower schools are generally supported by the towns and villages, or by school associations; the gymnasia, and other similar establishments, by the general funds of the State, or of the province in which they are situate; the normal schools, partly by the general funds of the State, and partly by the departmental funds for schools; and the universities by the general government, or by the produce of the estates with which some of them have been endowed. The whole business of education is under the special charge of the Minister of Public Instruction, assisted by a numerous council, who are divided into three sections; one for church affairs; one for general education; and a third for medicine — all the members receiving salaries from the State. In each of the provinces there is a Provincial Consistory, formed upon the same model, whose duty it is to superintend the gymnasia and higher burghal schools; and the parish and minor town schools are under the charge of the magistrates and curates of the respective towns and parishes,

assisted by committees. There is moreover in the chief town of every circle an inspector, whose authority extends over all the schools of the circle, and who corresponds with the local inspectors and committees. In the regency of every department there is a special councillor for the primary schools, the *Schulrath*, who forms the connecting link between the public instruction and the ordinary civil administration of the province, inspects the schools, quickens and keeps alive the zeal of the local inspectors, committees, and teachers; and conducts the correspondence relative to schools, in the name of the regency, with the local and superior inspectors, the provincial consistories, and the Minister of Public Instruction. Besides the universities, there are theological academies for the Catholics, Lutherans, and Moravians, where the priests and pastors receive the instruction necessary to qualify them for their duties. There are also establishments for the study of medicine, surgery, midwifery, the veterinary art, the military profession, and rural economy, and for teaching the blind, and the deaf and dumb. The collections of natural history, philosophical and astronomical apparatus, and the public libraries, are placed upon a very liberal footing, and are accessible to any person who chooses to avail himself of their assistance.

GOVERNMENT.—The government is an unlimited monarchy vested in a king. The ancestors of the reigning family were a branch of the princely house of Hohenzollern, in Suabia; afterwards Margraves of Brandenburg, and Electors and Archchamberlains of the Holy Roman Empire in Germany; all of which dignities were bestowed upon them by the Emperor Sigismund in the years 1415 and 1417. In 1594 the Duchy of Prussia was united to the Electorate by the marriage of the Elector John Sigismund with the heiress of the last Duke of Prussia. Various accessions were subsequently made, and at length the Elector Frederick III. obtained from the Emperor the royal dignity or title of King of Prussia. King Frederick the Great, who ascended the throne in 1740, and died in 1786, acquired Silesia by conquest from Austria; and a part of Poland at the first dismemberment of that kingdom. A larger portion was acquired at the subsequent dismemberment of Poland in 1795; and at last, in 1815, the present limits of the kingdom were determined by the Congress of Vienna, and the King invested with a degree of power and political importance which he did not previously possess.

The legislative and executive power is vested exclusively in the King, and his authority is less restrained by the ancient usages and privileges of his subjects than that of any other European sovereign. The administration is vested in a Council of State, consisting of members of the Royal Family, and of the Ministers of Foreign Affairs, Finances, Justice, Public Instruction, Trade, Public Debt, Police, and War. Of this council the State Chancellor is president, and to him all the heads of the various departments are accountable, and make weekly reports; while he receives his instructions from the King. In the details of the administration, through all the departments, there prevails much simplicity, and a degree of economy, which scarcely finds a parallel under any other government.

REVENUES. — The public revenues are derived from various sources; but the most satisfactory account we can give of them will be to exhibit a statement of the receipt and expenditure for ten years, 1829–38, from which it appears that the average annual income is £7,605,675 sterling, and the average annual expenditure, £7,668,525 sterling. The public debt amounted, as on 12th January 1833, to £25,678,365 sterling.

AVERAGE INCOME for the Years 1829 to 1838.	*Prussian Dollars.*
From crown-lands and forests, after deducting the sum set apart for the King's civil list,	4,313.100
From sold and regulated crown-lands for the more speedy extinction of the national debt,	1,000,000
From mines, smelting-houses, salt-works, and the porcelain manufactory at Berlin,	825,200
From the Post-Office,	1,140,000
From taxes, licences, customs, excise, and salt monopoly :—	
Land-taxes,	9,719,500
Personal taxes,	6,604,200
Carry forward,	23,602,000

AVERAGE EXPENDITURE 1829-1838.	*Pr. Doll.*
1. Administration of the National Debt :—	
Interest,	6,929,800
Sinking-Fund,	3,135,100
2. Pensions, Claims, and Life Annuities :—	
Regular pensions to the officers of government, their widows and families,	966,000
Life annuities and pensions to secularized corporations, also pensions according to the Imperial recess of 25th February 1803, and to other treaties and engagements,	1,860,300
3. Indeterminable Annuities :—	
Compensation for abandoned rights and privileges,	0,341,500
4. The King's Cabinet, the Ministry of State Office, Board of Control and of the Public Treasure, the Mint, State and Provincial Records Office, Secretary of the Council of State Herald's Office, and Statistical Department,	297,500
Carry forward,	13,430,200

	Pr. Doll.
Income brought forw^d.	23,602,000
Licences, . .	1,897,100
Customs and excise,	19,840,200
Salt, . .	5,173,600
From sundry minor sources,	391,600
Total Annual Revenue,	50,704,500

Equal to £7,605,675 sterling.

	Pr. Doll.
Expenditure brought forward,	13,430,200
5. The Ministry for Clerical and Medical Affairs, and of Public Instruction, ...	2,537,400
6. The Home Department, ...	3,013,500
7. The Board of Trade, of Public Works and Roads,	2,628,600
8. The Ministry of Foreign Affairs, . .	623,000
9. The Army, ...	22,871,100
10. The Treasury, ...	254,900
11. The Ministry of Justice, ...	1,936,800
12. The Provincial Administration, . .	1,786,200
13. The Central and Provincial Studs, . .	168,400
14. Extraordinaries, ...	1,773,500
Total,	51,123,500

Equal to £7,668,525 sterling, at 3s. per dollar at the par of exchange.

Note.—The difference between the total average receipt and the total average expenditure should be greater, but we have omitted in the statement of the latter,—1. The interest and extinction of recognised provincial debts, which has formed an item of expenditure only for the years 1835-6-7-8, at the rate of 41,000 dollars annually; and 2. The compensations for received capitals and securities for the same four years, at the rate of 637.750 dollars annually. The Home Department, No. 6, likewise includes the expenditure for the Board of Trade during the three years 1829-30-31,; and, of course, No. 7 omits that expenditure for these years. The average income and expenditure for the three years 1829-31 was 50,796,000 dollars, and for the year 1838 the income and expenditure amounted to 52,681,000 dollars, showing a great regularity in the financial department.

ARMY. — The military strength of Prussia consists of—1. The standing army; 2. The first call of the *landwehr*, or reserve; 3. The second call of the landwehr; and 4. The *landsturm*, a militia or national guard. The effective strength of the standing army on the peace establishment is about 150,000; but when its ranks are placed on the full war complement, the numbers will amount to 337,000. The infantry of the guards amount to 16,300; cavalry of the guards, 16,080; artillery, engineers, &c. of the guards, 3220; total, 35,600. The line is composed of 40 regiments of infantry, besides 4 battalions of chasseurs and jagers (riflemen), amounting to 118,540 men; 32 regiments of cavalry, amounting to 19,100; artillery, engineers, &c. amounting to 15,800; altogether 153,440. The landwehr consists of 32 regiments of infantry, and 8 battalions of reserve, amounting to 106,140 men; 32 regiments of cavalry, with 8 squadrons of reserve, = 21,000; artillery, 12,700; altogether 139,840. There are also four veteran companies to each division, or altogether, 8100 men.

The ranks of the army are supplied by conscription and ballot. With the exception of ministers of religion, teachers of schools, persons in the civil employments of the government, and professors in the universities, all young men, between the ages of 18 and 26, are liable to be drawn for military service, and, when drawn, must serve. The standing army is drawn only from those between 20 and 25; but volunteers may enter at 17, may choose the corps in which they wish to serve; and, upon condition of equipping themselves, are exempted from more than one year's service. The others do duty with the standing army for three years; for two years more they belong to the war reserve, and then pass into the landwehr, unless they choose to enrol themselves for a further limited period, which insures them an increase of pay, and a preference in civil appointments. As, however, only from 25,000 to 30,000 recruits are required each year to supply the place of those whose service expires, the rest of the men of the requisite age pass at once into the landwehr, in which they continue till the age of 32. Thus is formed the first call of the landwehr, which is assembled for exercise twice a-year, and, in war, forms part of the active army. The second call of the landwehr consists of all those between 32 and 39, who have previously served. These are seldom under exercise: and, in case of war, they would be employed in garrisoning the fortified places. The landsturm comprises all men between 17 and 50; they are liable to be called on in time of peace to preserve the public order, or in war for the defence of the country. The landwehr regiments are respectively attached to the regiments of the line, which are aways quartered in the same provinces. The army is divided into 9 corps d'armee, one of guards, and 8 of the line.

Except when a youth is attached to the artillery, in which the term of service extends to five years, three years constitute the limit of service in the regular army, and that is almost always curtailed, on the plea of furlough, to two; and, in the cases of nobles, it never exceeds one year as a private soldier. But still all continue liable to serve in the landwehr and landsturm; and thus, from the commencement of his manhood till its vigour forsake him, every Prussian is liable to military service, though, except in time of war, the period is too short to be complained of as a hardship. Promotion to the highest rank is open to all, but the candidates undergo strict

examination as to their qualifications. Soldiers who are maimed or severely wounded are admitted into the hospitals at Berlin, Stolpe, and other places, or into one of the 24 invalid companies, and receive board, lodging, clothes, and medical attendance. Those who are less severely wounded, or who are rendered by military service incapable of earning their livelihood, receive pensions according to circumstances. To the military establishments belong the institutions for the education of the children of soldiers at Stralsund and Annaburg, and the military orphan hospital at Potsdam, where the orphans of soldiers are maintained and educated.

The principal fortresses are: — *Kustrin* and *Spandau*, in Brandenburg; *Glatz*, *Glogau*, *Schweidnitz*, *Neisse*, *Silberberg*, and *Kosel*, in Silesia; *Graudenz*, *Pillau*, *Thorn*, *Danzig*, with *Weischselmunde*, in Prussia; *Posen*; *Colberg* and *Stettin*, in Pomerania; *Magdeburg*, *Wittenberg*, *Torgau*, and *Erfurt*, in Saxony; *Minden* in Westphalia; *Wesel*, *Cologne*, *Juliers*, *Saar-louis* *Coblenz*, and *Ehrenbreitstein*, in the Rhenish provinces. The King of Prussia likewise has the right of furnishing a part of the garrison of *Luxembury*, in common with the King of Holland; and of the garrison of *Mentz*, with the Emperor of Austria.

PRODUCTIVE INDUSTRY. — 1. Agriculture; 2. Mines; 3. Manufactures; 4. Commerce.

§ 1. *Agriculture.*

The cultivation of the soil is the employment of three-fourths of the inhabitants of the kingdom; and in the course of the last century the industry of the agriculturist has changed the most barren and unproductive portion of Europe into a territory which not only supplies the wants of its own inhabitants, but generally leaves a surplus of corn for exportation. In Prussia and Pomerania four-fifths of the people subsist wholly by agriculture. But all the operations of the former are performed in a slovenly and indolent manner, with rude and clumsy instruments; and the extent of land sown with wheat does not amount to one-tenth of that on which rye is grown. In Brandenburg the soil is unproductive; but the cultivators are industrious, and, since the encouragement given to agriculture by Frederick the Great, uncultivated lands have been covered with harvests, thick forests have been supplanted by rich meadows, many unwholesome marshes have been drained, and the value of land has risen. In Silesia the crops are inadequate to the supply of the population, and grain is imported into that province from Austria and Poland. The principal kinds of grain produced are wheat, rye, barley, and oats; but the quantity of rye far exceeds that of every other, and forms the principal food of the people. Pease, beans, and buck wheat are also raised, and in some places, especially in Brandenburg, an article of food is collected from the seeds of the festuca fluitans. The cultivation of potatoes has been for many years gradually extending, and has already become so great as to supply nearly the entire food of a very great proportion of the labouring population. Besides articles of food the soil also produces many for trade and manufactures. The principal of these is flax, which is grown in every village, and almost by every peasant; and the quantity annually brought to market is very considerable, two-thirds of that quantity being produced in Silesia alone. Thread is also made from felwort, a plant of which the cultivation is rapidly extending. Tobacco, madder, woad, safflower, and hops are cultivated on a small scale; chicorum or succory is much used as a substitute for coffee, and is cultivated very largely in many districts. The making of sugar from beet-root has also become an important branch of industry, and large quantities are grown for that purpose. Wine of excellent flavour and strength is produced in the Rhenish provinces; inferior kinds are produced in Posen, Silesia, Brandenburg, and Saxony. Wines are liable to six rates of excise duty, according to quality; and it appears that those bearing the highest three rates are produced in the Rhenish provinces; that Silesia, Brandenburg, and Saxony produce only the lowest three qualities; and Posen the lowest only. The total quantity of wine produced in 1835 amounted to 14,561,511 gallons, nearly three times the amount produced in 1832. The culture of esculent vegetables, such as cabbages, turnips, carrots, pease, and beans, has been carried to a great degree of perfection. The silk raised in Silesia and some other places is too inconsiderable in quantity to be of much value; but the silk-worm succeeds well in Brandenburg, and the quantity of silk produced there is very considerable. The most productive branch of rural economy, next to corn, is that of breeding and fattening cattle; though the stock is very indifferent, and the number bears but a small proportion to the extent of land. The sheep generally are bad, but of late years very great improvements have been made in their fleeces by the introduction of Merino and Paduan rams. The total number of sheep

in 1834 was 12,632,277, and of these 2,831,553 were merinos and whole bred. The merinos are now sufficiently numerous to supply the manufacturers with the raw material which used formerly to be furnished principally from Spain. The horses are not good, though great efforts have been made by the Government to improve them, and studs are established for this purpose in several parts of the kingdom. The breeding of swine is a very considerable employment, and the hams, bacon, and sausages made from them, form a large proportion of the animal food of the inhabitants. The rural economy of Prussia, like that of most parts of the continent, is deficient in the proportion of land allotted to pasture. Hence the number of cattle is relatively small; and the effect of the want of manure is shewn in the small increase upon the crops of grain. The average increase is stated to be 6 for 1 of wheat, $5\frac{3}{4}$ for 1 of barley, 4 for 1 of rye, and $4\frac{1}{2}$ for 1 of oats. The land of the kingdom is thus appropriated:—

Ploughed land,	29.224.741
In garden culture,	295.302
Vineyards,	40.05.
Meadow and pasture land,	14,672,000
Woods, forests, and plantations,	17,574,294
Total, English acres,	61,806,388

The remainder of the country, amounting to about 12,000,000 acres, is occupied by lakes, rivers, ponds, canals, marshes, roads, the sites of cities, towns, and villages, and sterile tracts unfit for cultivation.

§ 2. *Mines and Minerals.*

The mines are not worked to the extent of which they are capable. The provinces which produce iron are Brandenburg, Silesia, Saxony, Westphalia, and those on the Rhine. The iron is smelted in the vicinity of the mines, generally with charcoal, but in some places with fossil coal; but little or no iron is exported. The mines of rock salt, and the salt springs, which are found in Brandenburg, Thuringia in Saxony, Westphalia and the Rhenish provinces, supply the consumption of their vicinity, but the Baltic provinces find it more advantageous to import salt from England. Coals are found in Silesia, Saxony, Westphalia, and Brandenburg, but the mines are not extensively worked, the use of coal being much limited by the want of means of conveyance. Gold exists in Silesia, but the mines were found to be unprofitable, and they have therefore been abandoned since 1798. There are silver mines at Tarnowitz and Rudelstadt in Silesia, and at Mansfeld and Rothenburg in Saxony. In Tarnowitz there is also an extensive and valuable mine of lead, which contains silver. Silesia also produces slates, mill-stones, marble, serpentine, porphyry, rock-crystal, jasper, carnelians, onyx, agates, and chrysoprasus. The other minerals of Prussia are copper and cobalt in Silesia, Lower Thuringia, and the Rhenish provinces; calamine and arsenic in Silesia; alum in Brandenburg, Thuringia, and the Rhine; vitriol and saltpetre in Silesia, Thuringia, and the Rhine; but enough of these articles is not produced even for home consumption. Amber is almost exclusively the production of Prussia proper, where it is found in mines, and is also thrown up by the sea upon the coasts, which are strictly watched, and the produce farmed from Government. Its value at present is much less than it was in ancient times; but workmen are still employed in some places in making it into jewels, scented powder, spirituous acid, and a fine oil, which is used as a varnish. Part of the raw material is exported by Danes and Italians, but Turkey is the principal market, the Turks using it to a great extent for mouthpieces to their tobacco-pipes. The quantity produced annually is more than 200 tons, and the revenue which Government derives from it is from £3000 to £4000 sterling. The quantities of other minerals produced in the year 1835, were:—Silver, 23,178 marks, equal to £46,974; copper, 16,803 English tons; pig-lead, 22,519 do.; litharge, 4703 do.; black-lead, 43,526 do.; zinc, 186,748 do.; ore of cobalt, 992 do.; ore of antimony, 4601 do.; manganese, 2533 do.; arsenic, 3447 do.; iron, 1,675,439 do.; sulphur, 1157 do.; bituminous coal, 8,558,201 Prussian tons; Anthracite coal, 2,338,232 do.; salt, 167,239 English tons; alum, 30,080 do.; vitriol, 39,263 do.; and the total value amounted to 9,196,366 rixdollars, or £1,379,455 sterling.

§ 3. *Manufactures.*

For a long period a system of domestic manufacture had prevailed, and still continues to a great extent, chiefly in the weaving of flax and wool. But of late years the introduction of machinery, and the erection of large establishments upon the same extensive scale as that adopted in Britain, have carried the production far beyond the demand for home consumption. Prussia and Saxony now export annually

a large quantity of manufactured stuffs. Weaving, and the preparation of yarn for the use of the looms, are the most important branches of manufacturing industry. Agricultural families frequently weave in the spring the yarn which they have spun during the winter; and the facilities which attend these branches of labour have led to the extensive adoption of them throughout the kingdom. Large quantities of linen and woollen yarn are annually produced by the hand; and in 1837 there were not less than 246,294 looms occasionally employed in the weaving of linen. Weaving, however, is almost entirely confined to four materials; flax, cotton, sheep's wool, and silk. According to the accounts made up to the end of the year 1837, there were in the whole kingdom, 152 cotton-mills, containing 125,972 spindles. In Saxony, there were at the same period, 107 mills, containing 370,805 spindles, making a total of 496,777 in both kingdoms. But, besides what is spun in the country, Prussia and the German States import a large quantity of cotton twist, chiefly from Britain. Woollen yarn is spun partly in large establishments, but principally by small machines of 40 spindles; and the spinning of wool by the hand has now become so unprofitable that it must soon be relinquished. Prussia is chiefly supplied with wool from the produce of her own flocks; some foreign wool is imported, but a greater quantity of native growth is exported. The imported wool is of a coarse kind, chiefly from Poland; while, on the contrary, that exported consists principally of fine quality, which is shipped at Hamburg for England. The number of machines for spinning worsted and woollen yarn at the end of 1837 was 4143, containing 401,210 spindles. The number of flax-spinning factories was 7, containing 10,444 spindles. The manufacture of woollen is much less extensive than that of linen, but is on the increase. The increase of the silk manufacture has been very rapid since 1831; the number of looms employed that year was 8956, while in 1837 it had increased to 14,111. Knitting by the hand, which is practised by the labouring population as an occasional employment, and among the wealthier classes as an amusement, continues to supply a great part of the hosiery required, at so cheap a rate that no machinery can compete with it. The shearing and finishing of woollen cloths furnished employment, in 1837, to 3480 persons.*

The iron manufactures are more than sufficient for the home consumption. Berlin has become famous for ornamental works of that material. There are more than 300 paper-mills, which furnish the common kinds of paper in quantities sufficient for home consumption; but the finer sorts are still supplied from Britain or France. Leather is manufactured to the full extent of the demand, the deficiency of hides and skins produced in the country being supplied from abroad. Copper and brass wares for all domestic purposes are also made, partly from native copper and calamine, but chiefly with copper imported. Tobacco, snuff, sugar, soap, candles, cabinetware, earthenware, porcelain, tin goods, and almost every other article of common use, are made within the kingdom. The establishments for brewing and distilling are very numerous; the quantity of beer brewed in 1831, amounted to 59,410,800 gallons; and the quantity of material used in the manufacture of spirits, in that year, was 6,536,254 bushels of grain, and 19,830,700 bushels of potatoes. In the larger cities, the letter-founders, printers, engravers, musical, optical, and mathematical instrument makers, goldsmiths, silversmiths, jewellers, watchmakers, and other artificers, are as numerous and as skilful as in any other of the Continental States.

§ 4. *Commerce.*

The foreign commerce of Prussia is much less than the extent of the country and the number of inhabitants would lead us to expect; a result of the restrictions with which it is loaded. Prussia possesses no seaports except upon the Baltic, and as none even of these are calculated to receive ships of great draught of water, there is very little trade carried on by Prussians beyond the limits of Europe. The greater part of the exports are conveyed by foreign ships, of which the British exceed in number those of all other nations together. The principal ports are Danzig, Königsberg, Elbing, Memel, Stralsund, Colberg, Rugenwald, Stolpe, Barth, Swinemund, and Wolgast.

The commerce by land and by internal navigation is principally with Austria and Russia. From Austria the Prussians receive salt and wine, and send linen yarn in exchange. From Russia they import hemp, corn, hides, tallow, and other raw produce, and send in return both linen and woollen cloths. The provinces on the Rhine

* "Account of the recent Progress and present Extent of Manufactures of Prussia, &c. from German official Documents, by R. W. Rawson, Esq.," read to the Statistical Society of London, 16th March, 1839.

carry on very considerable traffic in wine and manufactured goods with Belgium, Holland, and the neighbouring German States. The principal articles of general export are:—grain, linen and thread, cloth, zinc, ironwork, copper and brasswork, porcelain, timber, cabinetwork, ironmongery, needles, arms, Prussian blue, tobacco, salt meat, wine, liqueurs, brandy, Cologne-water, wax, Westphalian hams, watches, carriages, musical instruments, and mathematical instruments. The principal articles of import are:—gold, mercury, tin, sugar, coffee, tea, spices, and other colonial produce, French and Hungarian wines, cotton, silk, and leaf tobacco. The principal trading towns in the interior are:—Berlin, which is the centre of the commerce of the kingdom, and the seat of the great national bank; Elberfeld, the seat of the Rhenish West India Company, and the principal place for foreign trade; Breslau, the entrepot of the trade of Silesia, and Cologne, of that of the Rhine; Frankfort, on the Oder, Naumburg, Erfurt, Nordhausen, Aix-la-Chapelle, Coblenz, St. Goar, Remschied, Iserlohn, Soest, Bielefeld, Neuwied, Wesel, Duisburg, Hirschberg, Lissa, Traustadt, Posen, and Thorn.—*See* GERMANY, § *Commerce.*

INTERNAL COMMUNICATION. — The roads throughout Prussia, as in the rest of Germany, were formerly very little calculated for carriage travelling; but of late years, excellent roads have been formed between the principal towns, though in the more remote districts they still remain little better than tracks. With respect to *canals* and *railways*, see these articles under GERMANY.

ADMINISTRATIVE DIVISIONS. — The kingdom contains 8 provinces, which are divided into 25 regierungsbezirke, or governments, subdivided into 328 circles. The names, extent, and population of the Provinces and Governments are exhibited in the following

TABLE of the PROVINCES and GOVERNMENTS, with their Area and Population in 1838.

Provinces and Governments.	*Area in Square Miles.*	*Population in 1838.*	*Provinces and Governments.*	*Area in Square Miles.*	*Population in 1838.*
BRANDENBURG,			PRUSSIA,		
Potsdam with Berlin,	8,128	106,736	Königsberg,	8,673	750,113
Frankfort,	7,405	748,336	Gumbinnen,	6,337	563,212
POMERANIA,			Danzig,	3,236	353,171
Stettin,	5,034	472,577	Marienwerder,	6,787	506,054
Köslin,	5,494	371,766	WESTPHALIA,		
Stralsund,	1,679	162,852	Munster,	2,809	407,440
SACHSEN or SAXONY,			Minden,	2,033	423,937
Magdeburg,	5,273	1,039,461	Arnsberg,	2,977	510,250
Merseburg,	5,104	818,346	RHENISH PROVINCE,		
Erfurt,	5,324	851,044	Köln or Cologne,	1,538	431,148
SCHLESIEN or SILESIA,			Dusseldorf,	2,110	777,081
Breslau,	4,466	604,796	Coblenz,	2,330	467,480
Oppeln,	4,011	661,139	Trier or Treves,	2,786	451,907
Liegnitz,	1,312	316,685	Aachen, or Aix-la-Chapelle,	1,608	375,029
POSEN or POSNANIA,					
Posen,	6,836	801,924		107,885	14,271,530
Bromberg,	4,565	389,046			

TOPOGRAPHY.—Commencing, as usual, with the capital of the kingdom, we shall then proceed to the provinces.

§ *The Metropolis.*

BERLIN is situate upon the banks of the Spree, in the midst of a sandy plain, 340 miles N.N.W. of Vienna, 265 N.E. by E. of Frankfort on the Main, and 160 nearly E.S.E. of Hamburg. The nucleus, or centre of the city, is formed by the old town, which is divided into three portions by two branches of the Spree, and surrounded by a ditch, which alone remains to mark the outline of its ramparts. On the east, north, and south sides, scattered suburbs extend to a considerable distance, and on the west side a new town has been erected upon a regular plan, with long, straight, and spacious streets, generally crossing each other at right angles, and terminated or interspersed with places, or open areas, of various forms. Nearly the whole mass of buildings which compose the city and suburbs, is now enclosed by a wall, in which there are 15 gates, some of which, particularly the Brandenburg gate, are highly ornamental structures. The houses are of moderate height, none exceeding three stories, and are built with just enough of uniformity to show variety of taste amidst general sameness. The principal street, named *Unter-den-linden* (Beneath the lime trees), extends in a straight line, east and west, from the *Schloss-brucke* (Palace

bridge) to the Brandenburg gate, a distance of one mile and 320 yards, with a width of nearly 100 yards, divided into five roads by four rows of trees, and lined on each side by magnificent houses and public buildings. It is here that the splendour of the city is mostly concentrated; the rest of the streets are plain and without ornament; and even the places, though some of them contain fine buildings and statues, are mere sandy wastes, and have no inclosures within the line of their ill-paved streets. The centre of the city, the banks of the river, and the Unter-den-linden show some signs of life and even bustle, but the rest of the town displays little activity. The city, in short, was extended to its present dimensions, not to meet the wants of an increasing population, but to humour the taste or the caprice of Frederick the Great and his successors; and the population has therefore ample room, without crowding. The principal public buildings are: — The Schloss or Palace stands in the centre of the island formed by the Spree, and at the east end of the Unter-den-linden, but as a building, is more remarkable for its extent than for its elegance; the new museum built after a design of Schinkel's in 1830; the Egyptian museum; the arsenal; the porcelain manufactory; the royal library; the university; the theatre; opera-house; cathedral, Catholic church; the iron foundry; and the Brandenburg gate, at the west end of the Unter-den-linden, consisting of a much admired pile of Grecian columns, and lodges, built in imitation of the Propylœa of the Athenian acropolis, and surmounted by a bronze figure of Victory in a quadriga. Berlin contains a great number of scientific and literary establishments, the principal of which are:— the University, which ranks among the first in Europe; the military school; the military academy of surgery and medicine; the theological and philological seminary; the school of artillery and engineers; the school of mineralogy; the royal veterinary school; the school of arts; the school of the fine arts; the singing school; the deaf-and-dumb school; the royal academy of sciences; the academies of the fine arts, mechanical sciences, and architecture; societies of natural history, medicine, surgery, physic, pharmacy, medicine, geography, horticulture, and many others. It possesses also a fine botanic garden, an observatory, and several fine libraries, the principal of which is the royal library, one of the richest and most extensive collections in Europe. In November 1838, the population of the city and suburbs, exclusive of the garrison, amounted to 272,484. In 1838, the number of births was 9409, and of deaths 8649; the number of marriages 2753, and of illegitimate births 1206.

§ *Province of Brandenburg.**

1. *Government of Potsdam.* — Berlin, 247,336; Potsdam, 24,184; Brandenburg, 12,865; Prenzlau, 10,266; New Ruppin, 7415; Charlottenburg, 6081; Wittstock, 5866; Spandau, 5736; Schwedt, 5616; Wriezen, 5274; Rathenow, 5030; Stralau, Schoneberg, Rudersdorf, Franzosisch-Bucholz, Schönhausen, Oranienburg, Tegel, Kopnick, Straussberg, Liebenwalde, Rathenau, Trauenbriezen, Luckenwald, Wrietzen, Neustadt-Eberswald, Freienwald, Neustadt, Reinsberg, Perleberg, Havelberg, Templin, Strassburg, Neu-Angermunde, Belzig, Jutterbock, Dahme.

Potsdam, 18 miles S.W. of Berlin, is a large and fine, but desolate town, on the banks of the Havel, where the water of that river, which is dammed up, forms a spacious artificial lake. It is indeed, as a late traveller remarks, but a huge barrack, and there seems to be no living creature in the town except the soldiery. Yet Potsdam is one of the most interesting places in the kingdom; for it contains the palace and the tomb of Frederick the Great, whose spirit seems diffused over everything within it and around it. The tomb is a plain sarcophagus in the garrison church, overshadowed with the flags and eagles taken from the French in the late war. In the environs are the royal residences of Sans Souci, the new palace, and the marble palace. In the middle of the lake is the Pfaueninsel (Peacock island) the favourite summer retreat of the late King, said to be, at that season, a most lovely spot; and around it are artificial hills and valleys, adorned with groves and fine buildings, forming altogether a strange and delightful contrast to the sandy plain which surrounds it. *Brandenburg*, 35 miles W. of Berlin, on the Havel, is an old town, with an ancient cathedral; its inhabitants are occupied in cotton, woollen, linen, and leather works, brewing and distilling. *Spandau*, 10 miles W. of Berlin, the state prison of Prussia, is a strongly fortified town at the junction of the Spree and the Havel, which, in case of a siege, may be made to overflow the country, and cover the fortress from attack. Between Spandau and Berlin is the small town of *Charlottenburg*, which contains a fine royal palace, and, in a retired part of its garden, the exquisite monument of the late queen, Louisa. *Neustadt-Eberswald*, a busy town, with mineral waters, is the seat of the royal forest academy and institute; near it is the royal copper and zinc foundry, and at the village of *Eggermuhl*, the royal brass foundry. *Neustadt-an-der-dosse* contains a royal stud, and glassworks, and the metallurgic establishment of Hohenofen, where copper and silver are separated, *Prenzlau* or *Prenzlow*, 60 miles N. of Berlin, is noted for its vapour baths.

2. *Government of Frankfort.*—Frankfort on the Oder, 22,325; Landsberg on the Warta, 9981; Guben, 8786; Kottbus, 8020; Kustrin, 5240; Königsberg (Neu-mark), 5018; Mullrose, Furstenwald, Beeskow, Cressen, Zullichau, Wietze, Friedberg, Soldin, Neuenzell, Sorau, Friedrichsthal, Lubben, Luckau.

Frankfort, on the left bank of the Oder, 56 miles E. of Berlin, is a fine small city, with an industrious and commercial population, whose traffic is greatly promoted by three annual fairs, and by the canals which connect the Oder with the Vistula and the Elbe. In the neighbourhood are fine baths supplied by a mineral spring, discovered in 1821. *Kustrin* is an important fortress on the Oder, 18 miles below Frankfort, at the confluence of the Oder and Warta.

* The figures attached to the names are the amount of the population in 1834.

§ *Pomerania.*

1. *Government of Stettin.*—Stettin, 29,042: Stargard, 9989; Anklam, 7034; Pasewalk, 5381; Demmin, 5318; Golnow, Griefenhagen, Treptow, Unkermunde, Swinemunde, Wollin.

Stettin is a fine fortified town on the Oder, the capital of the province of Pomerania, 86 miles N.N.E. of Berlin. The royal castle and Landschafthaus (hall of the States) are its principal public buildings. It contains a gymnasium, a seminary for schoolmasters, a high-school, a school of navigation, the Pomeranian society for natural history and antiquities, and a considerable library in the State house. It is a busy commercial town, and one of the principal seaports. *Dam*, on the east bank of the river, is also strongly fortified in connexion with Stettin. *Swinemunde*, on the isle of Usedom, at the mouth of the Swine, one of the outlets of the Stettiner-haf, a well frequented sea-bathing place, with a tolerable harbour, lately much improved, is regarded as the port of Stettin.—Population 3600. *Anklam* is also a considerable trading town, near the west end of the Stettiner-haf.

2. *Government of Stralsund.*—Stralsund, 14,713; Greifswald, 9498; Barth, 3800; Wolgast, 4000; Bergen in Rugen; Puttbus, Arkona.

Stralsund, 125 miles N. of Berlin, is a strong, busy, and commercial town, on the west side of the strait of Gellen, which separates it from the isle of Rugen. *Griefswald*, is a small commercial town, with a university, a rich library, a cabinet of natural history, a botanic garden, an observatory, and other scientific and literary establishments. *Wolgast*, a small seaport town, with 4000 inhabitants, on the west side of a strait formed by the isle of Usedom. *Puttbus* is noted for the fine castle of the Prince von Puttbus, which contains a collection of national antiquities, and Etruscan vases, and a picture gallery. Near *Arkona*, the most northerly point of Germany, is a good lighthouse, and the remains of an ancient Slavonic fortress, of which this cape preserves the name.

3. *Government of Köslin.*—Köslin, 6699; Kolberg, 7321; Stolpe, 6983; Neu-Stettin, Rugenwald.

Köslin, Cöslin, or *Coerlin*, is a small industrious town, and the capital of the government. *Kolberg*, or *Colberg*, a fortified commercial town on the river Persante, which forms its harbour, not far from the Baltic.

§ *Sachsen or Saxony.*

1. *Government of Magdeburg.*—Magdeburg, 40,417; Halberstadt, 16,455; Burg, 13,117; Quedlinburg, 12,548; Aschersleben, 9433; Salzwedel, 6966; Schönebeck, 6968; Neustadt-Magdeburg, 6139; Stendal, 6109; Grossalza, Barby, Calbe, Stassfurt, Alt-Haldensleben, Hundisburg, Neu-Haldensleben, Tangermunde, Gardeleben, Oschersleben, Ströbeck, Thale, Wernigerode, Ilsenburg, Schierke.

Magdeburg, an old-fashioned town on the left bank of the Elbe, 75 miles W.S.W. of Berlin, is the citadel of Prussia, and one of the strongest fortresses in Europe. Its principal public building is the dom-kirche, or cathedral. It is an industrious and commercial town, and has several of the usual scientific and literary establishments, with a garrison of 5000 men. It has two suburbs, *Neustadt*, on the north, and *Sudenburg* on the south. *Schönebeck*, on the Elbe, 12 miles S.E., is noted for its great chemical work, where 200 different articles are prepared, and its great salt work, where 1000 workmen are employed. *Burg* is noted for its manufacture of clocks, and a fine house of education for the poor. *Halberstadt*, on the Holzemme, 30 miles S.W. of Magdeburg, a large commercial town, with a superb cathedral, a gymnasium, a seminary for schoolmasters, and a midwifery school. *Quedlinburg*, 10 miles S. of Halberstadt, is a busy town, with a gymnasium, a deaf-and-dumb institution, and mineral springs. *Wernigerode*, 15 miles W. by S. of Halberstadt, a town of 5000 inhabitants, has a fine castle of the mediatized Count von Wernigerode, with a rich library and a cabinet of natural history.

2. *Government of Merseburg.*—Halle or Saale, 25,200; Naumburg, 11,591; Zeitz, 8929; Merseburg, 8753; Wittenberg, 8107; Weissenfells, 7299; Ellenburg, 7175; Eisleben, 7143; Torgau, 6480; Sangershausen, 5133; Lutzen, Durrenberg, Lauchstadt, Kösen, Giebchenstein, Pforta, Rosbach, Mansfeld, Slebegerode, Hettstadt, Wettin, Lobejun, Langenbogen, Rothenburg, Prettin, Duben, Muckenberg, Lauchhammer, Stolberg, Rossla.

Halle, the capital of the government, is an old-fashioned town, near the right bank of the Saale, 88 miles S.W. of Berlin, and 8 miles W.N.W. of Dresden. It is a busy commercial town, and particularly noted for the activity of its printing presses; the seat of a University, one of the most celebrated in Europe, with a museum and fine library, and numerous other scientific and literary institutions. *Naumburg*, on the Saale, 25 miles S. of Halle, is a large commercial town, near which is *Pforta* or *Schulpforta*, celebrated through all Germany for its college, one of the oldest in Europe, where Klopstock, Wolf, and other eminent men were educated. To the S.W. of Naumburg, on the road to Weimar, is the *defile of Kösen*, so memorable in the wars of 1806 and 1813. At Kösen are salt-water baths, which have been frequented, from time immemorial, for the cure of diseases. At the distance of 8 and 18 miles N.E. of Naumburg are *Weissenfels*, a pretty town on the top of a steep hill, with a bridge over the Saale, and an old ducal castle; and *Lutzen*, near which were fought two great battles; the one in 1632, in which Gustavus Adolphus, King of Sweden, the great champion of Protestantism, was killed; and the other in 1813, when the Russo-Prussian armies were defeated by Napoleon. The place where Gustavus' body was found is marked by a simple stone, called his *denkmal*, which is much venerated. About 8 miles W. of Lutzen is *Rosbach*, where Frederick the Great, King of Prussia, defeated the combined armies of France and the Empire in 1757. Rosbach is also noted for its coal-mines. *Eisleben*, 20 miles W. of Halle, is noted as the birth-place of Luther, and for its copper-mines and foundries. *Wettin*, on the Saale, a small town with 2800 inhabitants, is noted for its coal-mines, particularly those of *Lobepin* and *Langenbogen*. The village of *Rothenburg* is also important for its copper-mines and quarries. *Merseburg*, 9 miles S. of Halle, has a fine cathedral which contains one of the largest organs in Germany; and near the town is a royal stud. *Durrenberg*, a village near Merseburg, noted for its salt-works. *Wittenberg*, a fortified town on the Elbe, over which it has a great bridge, 54 miles S.W. of Berlin. In its castle church are the tombs of Luther and Melanchthon; and in the market-place, a colossal bronze statue of Luther. *Torgau*, a fortified town on the Elbe, 48 miles N.W. of Dresden. *Lauchhammer*, a large foundry, near Muckenburg, employs 300 workmen, and produces fine cast-iron articles. *Stolberg*, a small town with 2200 inhabitants, situate in the Harz, contains the fine castle of Count Stolberg, with a rich library and a large park, 52 miles S.W. of Magdeburg.

3. *Government of Erfurt.*—Erfurt, 23,396; Muhlhausen, 11,491; Nordhausen, 11,023; Suhl, 7118; Langensabza, 6052; Schleusingen, Heiligenstadt, Ellrich, Beneckenstein, Trefurt, Gross-Sommern or Sommerda.

Erfurt, on the Gera, an old-fashioned but well-built fortified city, with a strong garrison, 86 miles S.S.W. of Magdeburg, and 15 W. of Weimar, is a busy commercial place, situate in a rich country, and contains a Catholic gymnasium, an evangelical gymnasium, a deaf-and-dumb, and other institutions. *Suhla* or *Suhl*, a small town on the Lauter, in the canton of Thuringerwald, entirely separated from the rest of the Prussian territory, 26 miles S.W. of Erfurt, carries on an extensive trade; and near it is *Schleusingen*, which has a gymnasium, a copper-foundry, and 2500 inhabitants.

of the rock, with three ranges of casemates capable of lodging 5000 men; *Wartha*, 9 miles Glatz, a place of 900 inhabitants, and a church of St. Mary, which is visited yearly by a great of pilgrims; and *Reichenstein*, at the foot of the Jauersberg, 14 miles E. of Glatz, noted for mine of arsenic.

vernment of Liegnitz. — Görlitz, 12,332; Gross-Glogau, 11,430; Liegnitz, 10,733; Grunberg, oldberg, 6762; Hirschberg, 6618; Jauer, 5730; Sagan, 5467; Lauban, 5240; Warmbrunn. *itz*, the capital, is a large commercial town, near the confluence of the Schwarzwald with the h, 42 miles W. of Breslau, with a royal college, gymnasium, library, &c. *Görlitz*, a com- town, 93 miles W. of Breslau, and 120 S.E. of Berlin, is the seat of the scientific society of usatia, with a fine library and museum; and contains also other societies. Its church of St. d St. Paul is noted for its large and fine organs and enormous bell. N.N.W. 30 miles from is the castle and park of Muskau, belonging to the eccentric Prince Puckler-Muskau. *Gross-*, on the Oder, 136 miles N.E. of Berlin, is a large fortified commercial town with a population, g the garrison, of 15,000. *Warmbrunn* (Hotspring) near Hirschberg, 33 miles S.W. of Lieg- a small town with 1900 inhabitants, but much frequented for the sake of its warm baths.

§ *Province of Posen.*

vernment of Posen.—Posen, 31,249; Lissa, 8631; Rawitsch, 8017; Knotoschin, 6635; Kempen, raustadt, 6064. 2. *Government of Bromberg.*—Bromberg, 7119; Gnesen, 5427.

or *Posnan*, formerly the capital of Great Poland, is a large and flourishing commercial city e Wartha, 160 miles E. of Berlin. It is the see of a Roman Catholic archbishop, who bears of Posen and Gnesen; has three yearly fairs, and is in the course of being strongly fortified. 30 miles E. of Posen, is considered to be the oldest town in Poland. It is, however, ill-built; a well-frequented yearly fair. The other towns are occupied by an industrious population, otherwise unimportant.

§ *Province of Prussia Proper.*

vernment of Königsberg.—Königsberg, 63,064; Memel, 7934; Braunsberg, 7546; Pillau, 4000; 3000; Wehlau, 3100; Lablau, 3300; Preussisch-Eylau, 2160; Frauenberg, 2000; Heilsberg, orungen, 2400; Rastenburg, 3800. 2. *Government of Gumbinnen.*—Tilsitt, 11,564; Insterburg, umbinnen, 6122; Lyk, 3300. 3. *Government of Danzig.* — Danzig, 53,808; Elbing, 17,857; urg, 5594; Stargard, 3000. 4. *Government of Marienwerder.* — Marienwerder, 5246; Thorn, ulm, 5201; Graudenz, 5182; Konitz, 2700.

ISBERG, the capital of Prussia proper, is situate upon the Pregel, not far from its mouth in che-haf, 350 miles N.E. of Berlin. The town is large and regularly built, but old fashioned: e seat of a University, with a celebrated observatory, and numerous other scientific and lite- ablishments. It carries on a considerable trade, through *Pillau*, which may be considered being situate at the entrance of the Frische-haf, where all the vessels which are too large to Königsberg stop. Adjoining Pillau is a fortress of a pentagon form, with defences so con- as to bring the cannon to bear particularly upon the Gatt, or entrance to the bay. It is of rength on the side next the sea, while it does not admit of being assailed on the land side. ch-*Eylau*, 23 miles S. by E., and *Friedland*, 28 miles S.E. from Königsberg, are famous for two ary battles fought there between the French and the Russo-Prussians in 1807. *Memel*, 74 miles of Königsberg, is a flourishing sea-port town, at the entrance of the Curische-haf, the prin- de of which is in timber and grain. *Frauenburg*, a small but picturesque town, 8 miles W. of erg, on the Frische-haf, contains the cathedral of the bishopric of Ermeland, in which the Copernicus, who died in 1543, is still shown. *Tilsitt*, at the confluence of the Tilse with the is a busy commercial town, noted for the peace contracted here in 1807 between the Emperors e and Russia.

g (*Dantzick* of the English, *Dantsick* of the French, and *Gdansk* of the Poles) stands in a ation, on the left bank of the most westerly branch of the Vistula, near the sea. It is an an- y, and, till 1795, was a free town governed by its own laws and magistrates, under the protec- sovereignty of the kingdom of Poland. The town is old fashioned and ill built; but from ion at the mouth of a large navigable river, it enjoys a considerable trade in exporting the duce of Poland. It is surrounded with strong fortifications 2¼ miles in circuit, and has 4

§ *Province of Westphalia.*

1. *Government of Munster.* — Munster, 18,605; Warendorf, 3900; Steinfurt, 2300; Dulmen, 2200; Koesfeld, 3000; Rheina, 2500; Bocholt, 4200; Recklinghausen, 2300. 2. *Government of Minden.* — Minden, 7785; Paderborn, 7639; Herford, 6640; Bielefeld, 5874. 3. *Government of Arensburg.* — Iserlohn, 8095; Soest, 7854; Dortmund, 6360; Hamm, 5167; Arensburg, 3200; Altena, 3700; Hagen, 3000; Unna, 4000; Schwelm, 3000; Werl, 2800; Brilon, 2800; Siegen, 4000; Horde, 1200.

Munster, on the Aa, not far from the Ems, formerly the capital of a sovereign bishop, and now the chief city of the province of Westphalia, is a well-built, busy, and commercial town, the see of a Catholic bishop, and the site of several scientific and literary institutions. It was here that the peace of Westphalia was signed in 1648. *Minden*, on the Weser, over which it has a stone bridge, is a fortified commercial town, 40 miles W. of Hanover. In the immediate neighbourhood is the *Westphalische Pforte* (Westphalian gate), a pass formed by the near approach of the mountains Jakobsberg and Wittikindsberg, at the foot of the latter of which a stone obelisk has been erected to the memory of Wittikind, the chief or King of the Saxons, who was subdued by Charlemagne. *Paderborn*, the see of a Catholic bishop; and 10 miles E. of it is *Driburg*, a small town, famous for its mineral waters and fine baths. *Iserlohn* is noted for the immense quantity of articles of copper, brass, and iron, made in the neighbourhood, and for rich mines of calamine, at the distance of two miles. The other towns of the province are all celebrated for the industry of their inhabitants.

§ *Cleves-Berg, or the Rhenish Provinces.*

1. *Government of Cologne.* — Köln (Cologne), 62,181; Bonn, 12,512; Muhlheim, 4100; Selters; Popelsdorf, 850; Konigswinter, 1900; Siegberg, 2500; Zulpich, 1200. 2. *Government of Dusseldorf.* — Dusseldorf, 21,421; Barmen, 26,158; Elberfeld, 25,418; Krefeld, 20,673; Wesel, 10,145; Burtscheid; with Leichlingen, 10,071; Hohescheid, 9532; Neuss, 8193; Muhlheim-on-the-Ruhr, 7442; Cleve, 7190; Duisburg, 6091; Kronenburg, 5838; Lennep, 5826; Ronsdorf, 5807; Essen, 5571; Emmerich, 5518, Werden, 2900; Sollingen, 3500; Lennep, 4500; Xanten or Santen, 3000; Ruhrort, 1700; Mors or Meurs, 3000; Geldern, 3600. 3. *Government of Coblenz.* — Coblenz and Ehrenbreitstein, 15,657; Kreuznach, 8081; Neuwied, 5635; Rhense, 1500; Wallendau, 2700; Bendorf, 1900; Andernach, 2700; Ober and Nieder Mendig; Laach; Boppard, 3700; Ober Wesel, 2300; Trarbach, 2400; Kochem, 2300; Mayen, 3600; Wetzlar, 4500; Dattenberg, 540. 4. *Government of Treves.*—Treves, 14,723; Saarbrücken, 7227; Neumagen, 1100; Wittlich, 2300; Berncastel, 2000; Saar-louis, 4400; Duttweiler, 1300; Sulzbach; Friedrickstha l; Prum, 2100; Gerolstein, 700; Ehrang, 1000. 5. *Government of Aachen.* — Aachen, or Aix-la-Chapelle, 37,858; Eupen, 10,967; Duren, 7040; Burtscheid, 6467; Malmedy, 4100; Montschau or Montjoie, 3000; Ingenbruch, 800; Julich or Juliers, 2800.

Köln, or *Cologne* (the Roman *Colonia Agrippina*), is a large and very ancient city, on the left bank of the Rhine, in the S.W. angle formed by the crossing of 51° N. lat., and 70° E. long. It is about seven miles in circuit, surrounded with strong ramparts and towers, and is connected by a bridge of boats with *Deutz*, a small town on the right bank of the Rhine, which is also strongly fortified, and forms part of the system of the fortifications of the city. The streets of the city are narrow and crooked; the structure of most of the houses indicates great antiquity; and "altogether the town is a collection of dirty streets, lanes, and ill-arranged open places, jumbled together in a confused mass." (*W. Chambers.*) Its numerous population are devoted Catholics, and addicted to the grossest superstition and idolatry. The city contains many churches, which deserve particular attention on account of their beauty and antiquity; the principal of which is the cathedral, the most magnificent specimen of Gothic architecture in Germany, if not in Europe. The choir only is finished; but the King of Prussia has determined to complete the structure according to the original designs, which are still preserved. It contains a relic which is highly valued, in the skulls of the three Magi, or wise men of the East, who visited the infant Saviour at Bethlehem. They are decorated with gilt jewelled crowns, and their names are affixed in ruby characters. The church of St. Ursula is lined with the bones of 11,000 British virgins, who fled with that saint, and landing near the mouth of the Rhine, found their way to Cologne, where they preferred death to the dishonour which awaited them from the Pagan inhabitants. These and the other churches abound with similar emblems of superstition; but the church of St. Peter contains a splendid painting, by Rubens, of the crucifixion of that apostle, which is esteemed as one of the finest of his works. Cologne is noted for the manufacture of a kind of spirituous liquor named from it, of which a million of flasks are annually exported. The most celebrated makers bear the name of Farina; but there are several rival members of the family, each of whom boasts to be the only true one. Cologne has been declared a free port, and is calculated, from its situation, to be a great commercial emporium, if the inhabitants could only be induced to devote themselves to the active pursuits of trade. A railway has been commenced to connect Cologne with Belgium. Near the city is the abbey of *Altenberg*, noted for its church, which is considered one of the finest architectural structures in Germany.

Bonn, the seat of a university, and formerly of the Elector-Archbishop of Cologne, is a fine cleanly, compact town, on the left bank of the Rhine, 13 miles by land and 20 by water above Cologne. Its ancient minster or cathedral owes its origin to the Empress Helena; but has been rebuilt since her time; the present light and elegant Gothic structure bespeaks the style of the twelfth century. The fine and spacious electoral palace has been appropriated as a university for the Rhenish and Westphalian provinces; it stands upon elevated ground, enjoying a magnificent prospect, and is connected with the pretty village of Poppelsdorf by a shady avenue of chestnut trees, a mile in length, which forms the fashionable promenade of the inhabitants. In the immediate neighbourhood is the chateau of Clemensruhe, with a fine garden, lecture-rooms for the courses of mineralogy, botany, and zoology, the physical and chemical apparatus, the rich cabinet and library of natural history, and the botanic garden. *Liegberg*, with a fine church and an abbey, which has been converted into an asylum for idiots. Between Bonn and Coblenz, along the river, are several places of note; such as *Kreutzberg, Godesberg, Rolandseck, Oberwinter, Remagen, Sinzig, Breizig, Rheineck, Brohl, Weissenthurm*, on the left bank; *Draehenfels, Königswinter, Unkel, Erpel, Okenfels, Linz, Hammerstein, Sain*, on the right; and the islands of *Werth, Nonnenwerth, Grasswerth, Niederwerth*, and others.

Dusseldorf, on the right bank of the Rhine, below Cologne, is a fine town, in a delightful situation, with a number of scientific and literary establishments and institutions; and within the circuit of a few miles are the flourishing manufacturing and commercial towns of *Elberfeld, Barmen, Remscheid, Krefeld, Solingen*, &c., of which Dusseldorf forms the shipping port and depot. The ramparts of Dusseldorf have been demolished, and converted into fine walks. Elberfeld, in particular, has grown very rapidly to its present extent and importance; and its merchants and manufacturers extend their enterprises to every part of the world. *Wesel*, a commercial town and free port on the Rhine, 35 miles below Dusseldorf, is strongly fortified, and has a garrison of 300 men. *Duisburg*, also on the Rhine, a small town, formerly the seat of a university, now converted into a gymnasium. *Cleve* and *Geldern* are also industrious towns to the west of the Rhine. *Emmrich*, on the Rhine, a free port.

Coblenz (*Coblentz*), in a delightful situation at the confluence of the Moselle with the Rhine, is built upon a triangular point of ground formed by the two rivers. The town contains about 1200 houses, and is surrounded by very strong fortifications, which consist of four principal parts: 1. The works

immediately enclosing the town; 2. The *Carthaus*, now called the fort of the Emperor Alexander; 3. *Petersberg*, now called the fort of the Emperor Francis—all on the left bank of the Rhine; and 4. *Ehrenbreitstein*, or Fort Frederick William, on the right bank, occupying a hill, so completely fortified as to be deemed impregnable. The fort is connected with Coblenz by a bridge of boats, while the Moselle is crossed by a stone bridge. This system of fortifications is intended to form altogether an entrenched camp, capable of containing an army of 100,000 men; presenting a most formidable defence against the French, should they ever have another Napoleon to lead them forth to the conquest of Germany. The general appearance of Coblenz, as a town, is highly agreeable; the spacious places and streets, the handsome buildings which adorn them, the numerous churches, the shops, and the quays, make a pleasing impression on the traveller. At *Rhense*, or *Rhees*, a few miles S. of Coblenz, is the spot, still marked by stones, where formerly stood the König's Stuhl (King's seat), where the Electors of the Rhine used to meet to deliberate upon the affairs of the empire, and where several emperors have been chosen, and some dethroned—as was Wenceslas, in 1400.

Neuwied, on the right bank of the Rhine, below Coblenz, is a pretty little town, with a progymnasium, a seminary for schoolmasters, and a fine castle of the Prince of Wied, celebrated for its library, and fine collections of medals, Roman antiquities, and objects of natural history. The town is also noted for a number of silk works, cotton works, and the manufacture of cabinetwork, white-iron work, and ironmongery, most of which are carried on by Hernhutters. On the left bank of the Rhine, opposite Neuwied, is the monument erected by the French army of the Sambre and Meuse to their general, La Hoche, who died here in 1797. At *Engers*, S.E. of Neuwied, the remains of a Roman camp and other works have been discovered, supposed to belong to the ancient Victoria. *Andernach*, on the left of the Rhine, N.W. of Coblenz, has a considerable trade in millstones and trass dug out of the neighbouring quarries, and of excellent quality. The millstones are exported to Holland, Hamburg, England, Russia, and even America. Near Andernach are:—*Tönestein*, a small place celebrated for its mineral waters; *Ober Mendig* and *Nieder Mendig*, two large villages, where the millstones are procured; *Laach*, a small place, with a large abbey, on the banks of a lake which never freezes, and which occupies the crater of an extinct volcano. Nearly 20 miles S. of Coblenz, near St. Goar, is the *Lurley berg*, a precipitous rock on the right bank of the Rhine, noted for its echo, which repeats sounds distinctly three or four times, or even, as some allege, fifteen times. *Kreuznach*, on the Nahe, 43 miles S. of Coblenz, is a considerable town, with rich saltworks. The remaining towns in the government are:—*Ober Wesel*, on the Rhine, with an ancient church and slate quarries; *Trarbach*, on the Moselle, with mines of copper and lead, and quarries of slates; *Kochem*, near which are the baths of *Betrich*; *Mayen*, famous for millstones; *Dattenberg*, near which is *Alsauer*, where there are mines of argentiferous lead; *Boppard*, a small town on the Rhine; and *Wetzlar*, upon the Lahn, in a small detached territory surrounded by the possessions of Nassau and Darmstadt. Wetzlar was the seat of the Imperial Chamber, a court of appeal for the German empire, from 1693 to its dissolution, and possesses a fine cathedral. In its neighbourhood are about 300 small tombs, but no bones have been found in them.

Treves, or *Trier*, is a small city upon the Moselle, 63 miles S.W. of Coblenz. The city is very ancient, believed to be the oldest in Germany, and was formerly the see of an archbishop, who was one of the electors of the Holy Roman (German) empire. It is finely situate between two mountains covered with vineyards; contains many fine churches and palaces, a great collection of antiquities, and a fine stone bridge over the Moselle. It had also a university, for which a gymnasium has been substituted; it contains several other institutions, and a garrison of about 2000 men. *Gerolstein*, 43 miles W. by S. of Coblenz, a village at the foot of an extinct volcano, in the neighbourhood of which are extinct volcanoes, and mineral springs. *Saarbrucken*, 37 miles S.E. of Treves, is noted for its coal mines. *Saarlouis*, a few miles west, a small fortified town on the Saare, has mines of lead and iron in its neighbourhood. *Sulzbach* and *Fredericksthal*, noted for their glassworks; and *Dutweiller*, for its alumwork, and for a burning coal mine, which has been on fire for several years. *Wittlich*, a small town with mineral waters, 23 miles N.E. of Treves.

Aachen (*Aix-la-Chapelle* of the French), 40 miles W. of Cologne, an ancient imperial city, now the see of a bishop, and of a court of appeal, is situate in a valley nearly surrounded with hills; and has been long noted and much resorted to for its mineral waters. It consists of several respectable, with many dirty and confined streets; and several churches, which from their antiquity and various ornaments deserve to be visited; but the two most interesting buildings in the town are the town-house, and the cathedral, the latter of which, or at least a part of it, was built by Charlemagne, and contains his tomb; but his remains have disappeared. He was not buried, but placed in a white marble chair, with his imperial robes and crown, in the year 814. After a lapse of nearly two centuries, the vault which contained these precious relics was opened by the Emperor Otho III. who carried off the ensigns of royalty to be used at the coronation of the future emperors. It was opened a second time, in 1165, by the Emperor Frederick Barbarossa, who transferred the body to a splendid sarcophagus, and placed the chair in the church, where it is still preserved. The sarcophagus is now empty, and how or when it became so is not known; though a skull and an arm bone, reputed to be those of Charlemagne, are still remaining in the reliquary of the cathedral. From the time of the Emperor Louis I. to the year 1558, thirty-six kings of Germany* and ten queens were crowned at Aachen; and 17 diets and 10 synods have been held there. The waters of Aachen are sulphureous, warm, and nauseous; and one of the hottest of the springs is so abundant that the water cannot all be used for drinking and bathing, and is therefore allowed to escape for the benefit of the lower classes, who wash their clothes with it. Aachen is the only Prussian town in which gambling is licensed and allowed, and one of its gambling-houses, named the *new redoubt*, ranks as the most splendid and profligate of all the establishments of the kind on the continent. The city has been of late years much embellished; and besides several splendid hotels and gambling-houses, contains a superb bath-house, a new theatre, and several fine fountains. It is also the seat of flourishing manufactures of various kinds, to the value of £440 annually; its needles are equal to the best English; its other articles of produce are cloth, linen, cotton, and indienne, horologerie, goldsmith work, and carriages. To the south of the city, in the bottom of a valley, is *Burtscheid*, a busy town, with very copious warm springs, which form a considerable stream, named the Hot Brook. This stream, at the distance of two miles, forms a pond, which never freezes, and contains various kinds of fish, carp, pike, tench, and others, which have so disagreeable a flavour that they cannot be eaten till after they have been kept several weeks in cool and pure water. The other principal places in this government are:—*Malmedy*, a flourishing town, with tanneries and other works, and a superb church; *Morenet*, a small village, noted for rich mines of calamine; *Roggendorf*, another small village, beside the *Bleyberg*, which contains rich lead mines; *Durren*, a large town, with manufactures of ironmongery, nails, and paper; *Stollberg*, *Eschweiler*, and others, all noted for their manufacturing industry. *Julich*, or *Juliers*, a small fortified town on the Roer, gave name to the late duchy of Juliers.

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* Originally the Emperor was not properly Emperor of Germany, though usually so styled. He was King of Germany, and Emperor of the Holy Roman Empire; in which character it was that Charlemagne, Otho, and others, were crowned at Rome by the Pope. His title ran thus:—"Electus Romanorum Imperator semper Augustus, ac Germaniæ Rex," &c.

DENMARK.

ASTRONOMICAL POSITION. — Between 53° 20′ and 57° 44′ N. latitude, and 8° and 15° 28′ E. longitude.

DIMENSIONS. — Length, from the southern border of Lauenburg to the Skaw, 298 miles; and the greatest breadth, including intervening seas and islands, from the west border of Jütland to the eastern point of Meon, 180 miles; or, including Bornholm, 285. The superficial area of the kingdom is estimated at 21,887 square English miles.

BOUNDARIES.—*Northern* :—The Scaggerack and Cattegat. *Southern*:—The Elbe, and the territories of Hamburg, Lubeck, Hanover, and Mecklenburg. *Eastern* :— Baltic Sea, and the Sound. *Western* : — The North Sea or German Ocean.

GENERAL ASPECT. — Denmark is a portion of the great European plain, and may be characterised as almost uniformly level, with partial inequalities of surface, particularly in Holstein and Sleswick, where the elevation sometimes amounts to 1000 feet. There are hills also in the islands of Fünen and Zealand. The kingdom consists of two great divisions, the continental and the insular; the former being a long narrow peninsula, projected from Germany, and terminating in the Skaw; the latter comprising a number of islands between that peninsula, and the neighbouring kingdom of Sweden, separated from each other by several straits, which form the communication between the North Sea and the Baltic. The soil, even to a considerable depth, is composed of sand and clay; but in the Vindsyssel, in place of sand there are strata of peat or turf of great extent, which, on the borders of the sea, are covered with the moving sand of the downs. Along the western or oceanic coast of the peninsula, the surface is a continued level of marshland, protected from the sea by dikes, while the interior is dry and sandy. Lauenburg is an undulating plain, with few hills. Zealand, Fünen, and most of the other islands, present nearly the same appearance; though during summer vegetation succeeds surprisingly, and delights the eye with a fresh bright green. The most beautiful beechwoods, with fertile fields and luxuriant meadows, vary the scene; while numerous small lakes, and prospects of the sea, which burst on the sight, communicate life and variety to the landscape. Holstein, without ever reaching the picturesque, has a very pleasing character, consisting of gentle knolls, interspersed with small sheets of water. In general, however, there is little wood, but wherever it occurs, from its consisting chiefly of trees with glossy and luxuriant foliage, it tells well in the landscape. The aspect of the country in summer is singularly fresh and cheerful, and many spots might aspire to the character of pretty. The soil of the lowland is generally very fertile, producing the finest pasture and excellent corn crops. In the central parts of the duchy and in Jütland, the soil is arid, sandy, and barren.

GULFS, BAYS, AND STRAITS. — The Straits which divide the islands present a difficult navigation; and the shallows, rapid currents, and short and precipitous waves, concur to render the whole coast very dangerous, especially that of Jütland. The *Scaggerack* and the *Cattegat* separate Jütland from Norway and Sweden; the *Little Belt*, at one place very narrow, separates the Island of Fünen from Jütland and Schleswig; the *Great Belt* separates Fünen and Langeland from Zealand and Laaland; the *Sound* separates Zealand from Sweden. The Sound is almost the only one of these three Straits that is frequented by foreign ships; and every ship that passes through it pays toll to the King of Denmark. The frozen state of the Sound in 1830 suggested to the people of Elsinore to make an exact measurement of its breadth, when it was found to be 4328 yards at the narrowest part, viz. between the stone-halls on the Swedish side, and the extreme point of the fortress of Kroneberg on the Danish. But between the opposite harbours of Elsinore and Helsingborg the distance is 4602 yards. —*Edinburgh Journal of Nat. and Geog. Science*, II. 48, 1830. Bremner (*Excursions*, I. 267) says, "The width of this celebrated strait, at the narrowest point, is only about one mile and a half;" but 6665 Swedish ells are equal to 12,985 English feet, or only 215 feet less than *two* miles and a half. The water is not deep in every part. A sandbank opposite the castle renders it necessary for every ship to take a pilot; in which capacity a great part of the inhabitants of Elsinore are engaged. In 1839 the number of ships that passed the Sound was 16,309; being 2226 more than in 1838. The *Liimfiord* extends from the Cattegat nearly across the whole breadth of North Jütland, at first in a narrow stream, like a river or a wide canal, but afterwards expanding into a broad basin, divided by peninsulas and islands. It is separated from the North Sea only by a narrow belt of land, which was broken through by the waves in 1825; and the canal of Agger has since been formed at the breach, for the passage of vessels through the fiord.

CAPE. — The *Skaw* or *Scaggens odde*, at the extremity of Jutland.

ISLANDS.—1. *In the Baltic*— *Zealand*; *Fyen*, *Fionia*, or *Fünen*; *Alsen*; *Arroe*; *Taasing*; *Langeland*; *Laaland*; *Femern*; *Moen Amack*; *Samsoe*; *Anholt*; *Lessoe*; *Bornholm*; and many others. 2. *In the North Sea.* — *Fano*, *Romo*, *Silt*, *Fohr*, *Amron*, *Pelworm*, *Nordstrand*, and *Heligoland*. 3. The

Färoe islands, in the North Atlantic Ocean, belong to Denmark, and form one of the provinces of the kingdom. They are 22 in number, of which 17 are inhabited. They are situate between 61° 26′ and 62° 25′ N. lat., and 6° 17′ and 7° 43′ W. long. Most of them may be compared to the summits of mountain ridges rising out of the ocean, and generally running in a direction from north-west to south-east, attaining an elevation of nearly 3000 feet, and rising from deep water in perpendicular cliffs, 1200, 1500, and, in one instance, above 2000 feet high. The soil is principally composed of vegetable earth, mixed with the decomposed matter of the trap rocks of which these islands chiefly consist. Some of the mountains are covered with verdure, but most of them, towards their summit, produce only mosses and lichens. The climate is generally mild, but damp, with frequent fogs and stormy winds, though not very subject to rain. The extremes of heat and cold are seldom felt; the mean annual temperature of Thorshavn is 45.399°. The only corn generally cultivated is a hardy kind of barley (big), and even that does not always ripen. Oats and rye have been tried, but seldom with success; but turnips and potatoes thrive well. Frosts are not frequent, and seldom severe, but are occasionally of long duration. In the peat bogs are found the remains of birch trees, though none now grow in the islands. The flora contains 584 plants.*

RIVERS. — The *Eider* rises from a pond near Bordesholm in Holstein, runs through Lake Western, separates Schleswick from Holstein, and enters the North Sea below Tonningen. The *Delvenau*, *Alster*, *Bille*, and *Stor*, in Holstein, run into the Elbe. The *Trave* rises in Holstein, receives the *Stecknitz* from Lauenburg, and flows past Lubeck into the Baltic. The *Guden*, in North Jütland, runs into the Cattegat.

LAKES. — The kingdom contains more than 400 lakes, but they are mostly very small.

CLIMATE. — In the broadest part of the Danish peninsula there is no place more than 35 or 40 miles distant from the sea; whence it happens, that notwithstanding its situation in the northern part of the northern temperate zone, the climate is milder than its latitude would indicate. The prevalence of water covers the country with vapours and moist fogs, which, in summer, are usually dispersed by the winds which blow unobstructed by any hills. But under such a foggy sky spring does not appear with the charms which in finer climates announce its arrival; during that season the weather is by turns humid, tempestuous, or frosty. Summer, almost always very variable, lasts only from June to the middle of August, and even then the nights are invariably cool. Autumn is the finest of the seasons, but its duration is short. The cold weather returns in October, and November passes in cold rains and storms. Winter is subject to almost incessant snow or rain, especially in January and February, but the coasts are seldom covered with ice, though it has happened that the Sound has been frozen across. Generally speaking, the climate is not insalubrious.

VEGETATION.—The constant humidity of the atmosphere is favourable to vegetation; but the violence of the storms prevents the growth of forest trees. A wind from the north-west called Skai, which is most felt in May and June, withers the tops of the trees, while the west wind gives them a marked eastward inclination. Of the dark forests which once covered Jütland there now only remain long belts along its eastern side; Holstein has preserved only a few fragments in the middle of its heaths; but Lauenburg still contains the forest of Sachsenwald, formerly much more extensive. In these provinces the forests are composed of ash, alder, oak, and birch, especially the last; but the pine and the fir are rare. Fünen is dotted with small forests; Falster and the north-eastern part of Zealand contain several; in Bornholm are to be seen forests of birch. On the coasts is found the common glasswort; juniper, brambles, and several other berry-bearing shrubs border the highways and skirt the woods; a plant which the Danes call manna (festuca fluitans), and the grain of which yields very tolerable food, grows spontaneously in several of the islands, especially in Laaland. There are also several other indigenous plants, which are found useful in medicine and dyeing.

ANIMALS. — In losing their vast forests the Danish territories have lost also the larger wild animals. The wolf has entirely disappeared; the wild boar has become very rare; the stag and the fallow deer exist only in parks; but the fox, the martin, the polecat, the rat, and various smaller quadrupeds, exist in great numbers. Game is everywhere abundant; on the coasts of Jütland wild geese and ducks, partridges, snipes, and thrushes, frequent the marshes and fields; swans live at large in the Liimfiord, and on the islands of Amack and Bornholm, which they quit only when compelled by the severity of the frost; the eider-duck nestles in the clefts of the rocks; but the eagle and other large birds of prey are seldom seen. Domestic animals form the principal wealth of Denmark. Geese and other fowl afford considerable profit to those who breed them. There are two kinds of horses; the one, small but vigorous, abounds in the islands; the other, large, strong, and well shaped, is confined to Holstein and Jütland, and sought after by foreigners. Horned cattle are also smaller on the islands than on the mainland; their great numbers, and the number of the sheep, the breed of which has undergone the most important improvement by crossing with

* On the Vegetation and Temperature of the Faroe Islands by W. C. Trevelyan. — *Edinburgh New Philosophical Journal*, vol. xviii.

the breeds of Spain and England, attest the progress of agriculture. The swine of Jütland, are sent in considerable herds into Holstein, and there fattened and salted for exportation. Denmark has also long supplied the Continent with that race of dogs called Danish, famed for their strength and their fidelity, and also with the small black muzzled dog which the French call Carlin. The seas abound with fish; which not only supply a great portion of the people with food, but afford a surplus for exportation. Plaice is taken in the neighbourhood of the Skaw; the western coasts of Schleswig and Jütland are well supplied with beds of oysters; the borders of the Cattegat supply abundance of lobsters; porpoises and sea-dogs are often caught in the nets; and the small river Slie, in Schleswig, furnishes a species of herring which is in some estimation; and the Guden in Jütland supplies excellent salmon.

PEOPLE AND LANGUAGE. — The people of Denmark, with the exception of a few thousands *Jews* in Copenhagen and Altona, are of German descent, but of four distinct races:—1. The *Danes*, who form the great mass of the population, and occupy the islands, with North Jütland, and three-fourths of Schleswig. 2. The *Germans*, who possess Holstein, Lauenberg, and part of Schleswig. 3. The *Frisons*, who inhabit the islands along the west coast of Jütland, and a part of the bailiwick of Husum in Schleswig. 4. The *Angles*, who live between the Bight of Flensburg and the Schley on the Baltic. The Danes are of a middling stature and fair complexion, and are habituated, more than the people of the south of Europe, to the use of animal food and spirituous liquors. They have, in short, the habits of a people living in a northern latitude, and, except in the capital, are little acquainted with the improvements of the more polished part of Europe; the peasantry, besides, are but recently emancipated from a state of feudal servitude. On the other hand, the Danes have long enjoyed the various advantages resulting from the establishment of the Protestant religion.

The Danish language, though a cognate branch of the Teutonic, belongs to an independant and distinct family, the Scandinavian Gothic; and is, with respect to structure and roots, more remote from the modern High Dutch than the Portuguese is from French; yet the affinity and even identity of roots of the Teutonic and the Scandinavian tongues is so great that no doubt can be entertained of their common origin. Their separation, however, must have happened long before the commencement of authentic history, and their identity is therefore only a matter of philological inference. The modern Danish is sprung from the Norse, and bears exactly the same relation to that language as Italian bears to Latin. It is one of the softest languages now spoken in Europe, the consonants being so softened in pronunciation that they are scarcely perceptible.

POPULATION. — In 1828 the population of Denmark, including Iceland and the Färoe Islands, amounted to 1,988,531, of which 1,209,531 were Danes, 648,000 Deutsch, 70,000 Frisons and Angles, 55,000 Norse or Norwegians, and 6000 Jews. The latest account we have of the population is stated in the following summary, where that of Zealand, Fünen, Laaland, Falster, and North Jutland, is according to a census taken in 1834; that of Schleswig and Holstein according to a census in 1835; and of Lauenburg and the more remote possessions in 1832.*

Zealand, Moen, Samsoe, &c.		464,607
Fünen, Langeland, and Thaasing,		167,062
Laaland and Falster,		66,186
North Jutland,		525,952
Total of Denmark proper,		1,223,807
Schleswig,	330,192	
Holstein,	435,596	813,788
Lauenburg,	48,000	
Iceland, 51,000, and Färoe Islands, 7000 =		58,000
Total,		2,095,595

RELIGION.—Lutheranism is the established religion of the State, and is professed by almost the whole of the people. There are also a few Catholics, Hernhutters, Calvinists, and Mennonites; and the Jews, though few relatively to the general population of the kingdom, are nevertheless more numerous than the members of any of the four sects last mentioned taken separately. Not only does the most complete toleration prevail, but professors of all religions are admitted without distinction to public employments and dignities. There are nine Lutheran bishops, all nominated by the King; but they have no political character, and are confined exclusively to the proper duties of their office. The number of established clergy in

* The next census is ordered to be taken in 1840, and to include all the possessions of the Crown.

Jütland and the islands is about 1063; in Schleswig and Holstein, 517. They are paid partly by a share of the tithes, and partly by fees and glebe lands.

EDUCATION.—The educational institutions have reached a high degree of perfection; indeed few countries, if any, can compete with Denmark in this respect. All the institutions for education (except the University of Kiel) are managed by a Royal College, or Commission, which appoints the professors in the University of Copenhagen, and the rectors and teachers of all the grammar schools in Denmark proper. The University of Copenhagen has four faculties:—a theological, a judicial, a medical, and a philosophical; and to the last mentioned belong Greek and Roman literature, ethical and natural philosophy and metaphysics, mathematics, statistics, history, political economy, &c. The number of grammar and parish schools amounts to 3000; and there are, besides, 2000 schools in which the Bell and Lancastrian systems have been adopted. The latter are intended for elementary education and the instruction of the common people. The trade in education is, nevertheless, entirely free; any person, native or foreign, may establish a school in Copenhagen and compete with the Government schools; and their pupils are received at the University upon the same terms. But, though the number of schools is so great, and education apparently within the reach of all, yet the Danes generally are, nevertheless, said to be in a condition of great ignorance; and the system upon which their education is conducted, is said not only to fail to call genius from obscurity and foster it when discovered, but, on the contrary, to be destroying, and calculated to destroy everything like originality.* There is also a University for Holstein established at Kiel; but less richly endowed and less flourishing than that of Copenhagen.

GOVERNMENT.—From 1660 till 1834 the government was an absolute monarchy in Demark proper, without any legal or constitutional check; but it was tempered in various ways, by the influence of the Reformed faith, the freedom of the press, and the progressive improvement of the nation. In 1834, the late King Frederick VI. voluntarily relinquished a large share of the royal power, by granting to his people a free constitution. The kingdom has been divided into four districts, each of which has an Assembly or Parliament, without whose consent no law affecting person or property can now be promulgated; new taxes, as well as all levies for the public service, must be sanctioned by them. They can likewise suggest laws to the King for his approval; and, without having the power to judge public servants, they enjoy the right of formally complaining against them. The four provincial States are:—1. That of the Islands, which have 70 representatives; 2. Jütland, 51; 3. Schleswig, 44; and 4. Holstein, 48. Lauenburg is still governed by its old constitution. The public business is managed by a Privy Council nominated by the King; and subordinate to this council are the Chanceries of Denmark, Schleswig and Holstein, the Office of Foreign Affairs, the Treasury, the Chamber of Commerce, the Admiralty, the War-Office, and the Board of Trade. None but natural-born subjects are admitted into public offices, except in cases of extraordinary qualification. With respect to laws, there is no uniform code for the whole kingdom; Schleswig and Holstein retain their ancient usages and institutions, whilst Denmark proper, consisting of North Jütland and the Islands, is governed by the code of Christian V., who reigned from 1670 to 1679. There are in Denmark two orders of titled nobility, Counts or Earls and Barons; but there are also, as in every feudal kingdom, an untitled nobility, who rank as high in public estimation as those whom the King has enobled. In Holstein and Lauenburg, which form a portion of the Germanic Confederation, the nobility enjoy great privileges. The Ditmarshians in Holstein, and the citizens of Altona, likewise enjoy great liberties and privileges; and, in particular, are exempt from the system of excise and customs, to which all the rest of the kingdom is subjected.

REVENUES.—The public revenues are derived from various sources, viz. land-tax; house-tax; customs and excise; tax upon rank and salaries; stamps; tax upon property inherited or transferred; fees levied in public offices; woods and forests and other crown property; lotteries; the Sound toll, and various minor articles. The total amount for each of the two years 1835 and 1836, was £1,653,792, and £1,543,181 sterling. Of these sums about one fourth was produced by the Customs and Excise, and one fifth by the land-tax; but no less than £240,909 were derived from the sale of crown property in the two years, forming a large extraordinary item of revenue. The expenditure for each of these years, which may be taken as a fair average of the amount, stood thus:—

* *Bremner's Excursions*, I. 119.

	1835.	1836.
1. Establishment of the King and Royal Family,	£136,547	£133,269
2. Public departments, exclusive of the Customs,	147,272	160,712
3. Army,	299,557	308,002
4. Navy, and registration of seamen,	127,502	127,074
5. Pensions and allowances,	69,619	95,295
6. Public works,	58,439	60,331
7. Paid for encouragement of manufactures and institutions of public utility; on account of trade, and salaries and expenses of consuls abroad,	6,593	46,943
8. For the support and encouragement of the arts and sciences including university of Kiel and theatre of Copenhagen	24,691	25,798
9. Charitable institutions,	14,555	12,305
10. Miscellaneous expenditure,	51,292	33,410
Interest of the public debt,	532,816	525,744
Payments to the sinking fund of ditto,	196,553	78,841
	£1,563,037	£1,584,108

The amount of the public debt, as at 1st January 1836, was £13,562,035 sterling. The duties collected on ships passing the Sound, in the years 1835-6-7, was £177,324, £211,094, and £213,997; while the expense of the lighthouses for the maintenance of which the Sound toll was once ostensibly levied, was, in 1835 and 1836, £4849 and £6533! This tax is felt to be a very grievous burden upon shipping, not only from its amount, but from the way in which it is levied; but till those who pay it make an effectual remonstrance, it is not to be expected that the King of Denmark will renounce or diminish so large and easily collected a part of his revenues.

ARMY AND NAVY. — The army permanently on foot consists of about 12,000 men, and 3700 horses; but, at the period of the annual drill and exercise, when all the men absent on furlough attend, it amounts to 24,867 men, and 18,067 horses; besides the men employed in the baggage train, hospitals, head-quarters, in Bornholm, Faroe Islands, and the transatlantic colonies. Including all these, the total number will amount to 72,000 men. The country is divided into three military divisions; the first of which comprises Zealand, Laaland, Falster, Moen, Bornholm, and Christiansoe; the second, Jütland, Fünen, Samsoe, Langeland, Thorseng, and Arroe; the third, Schleswig, Holstein, and Lauenburg. At the close of 1837 the navy consisted of 7 ships of the line, 7 frigates, 5 sloops, 6 brigs, 3 schooners, 3 cutters, 58 gunboats, 6 gun-rafts, and 3 bomb vessels; requiring about 6500 men to man them upon the war establishment; and as there are upwards of 15,000 registered seamen liable to serve, there can be no difficulty in manning this fleet at any time. The merchant navy is in a very flourishing condition. The Danish sailors are steady, persevering, and faithful in the highest degree; and they work their vessels on such moderate terms, that they are much employed in the carrying trade by other nations.

PRODUCTIVE INDUSTRY. — 1. *Agriculture.*—Agriculture is in rather a backward state, and the condition of the agriculturists is not more advanced than that of the English farmer was a century ago. Whilst in England the labour of thirty-five persons in a hundred suffices for the agriculture of the country, in Denmark the labour of nearly sixty persons is expended for the same purpose. This is owing to the inferior quality of the implements, the smaller size of the farms, and the general backwardness of agriculture. In three-fourths of Jütland, oats, barley, and rye are the principal grain; wheat is little cultivated; but of late the cultivation of potatoes has been much extended. In the level and marshy tracts along the west coast, heavy crops of oats are raised, and rape is cultivated with advantage; but the great object of the farmer is grazing; and both horses and beeves are exported to a considerable amount. The products of Holstein are rye, barley, oats, and more wheat than in any other part of the kingdom; but its chief wealth consists in its pastures, and the horses and beeves which are fed upon them. The dairies of Holstein are also in high repute; and large quantities of cheese are made for exportation. Sheep-farming was formerly almost unknown throughout the province, but of late great care has been bestowed on this branch of industry. In Lauenberg and the islands, the agricultural produce is chiefly confined to the inferior kinds of grain. But throughout all Denmark, as well as the north of Germany, the long and severe winters are a continual and irremediable hindrance to agricultural improvement. The fiords, bays, and rivers are well stocked with fish, the taking of which form the principal occupation and subsistance of many of the inhabitants.

2. *Manufactures.* — The Danes have made very little progress in manufactures; two-thirds of the people derive their support from agriculture, and the others confine themselves to the supply of their own consumption in certain articles. Earthenware [illegible] many places; in Holstein there are considerable works in copper and brass; [illegible]ndry at Frederickwark is very extensive, but of iron foundries there [illegible] the kingdom. According to a late return, there were nearly thirty [illegible] forty-six sugar-refineries. The other branches of manufacturing in[illegible]ce are:—the tanning of leather, hat-making, and, among the pea-

santry, the practice of spinning linen and woollen, and knitting stockings, all performed by their families in their cottages. Such manufacturing establishments as they have are on a very small scale; and the existence of guilds, corporate rights, and exclusive privileges, still operate as a complete bar to their improvement.*

3. *Commerce.*—Few countries are more favourably situate for trade; and the Danes have not been insensible of their natural advantages. Of late years trade has assumed new life, and is rather in a flourishing condition; though its advancement has been more apparent in the provincial towns, such as Altona, Aarhuus, and Aalborg, than in the capital. The principal articles of export are:—corn, butter, meal, cheese, horses and beeves, skins, tallow, salt meat, lard, salt fish, wool, and corn brandy, which is manufactured to a great extent at Copenhagen. The principal articles of import are:—wine, salt, timber, tar, pit-coal, fruits, raw sugar, coffee and other colonial produce, cotton, silk, glass, raw and manufactured metal, fine cloth, silk stuffs, cotton twist, ironmongery, and many other articles. The principal trading towns are:—Copenhagen, Altona, Elsinore, Flensborg, Aarhuus, Kiel, Rendsborg, Tönningen, Glückstadt.

INTERNAL COMMUNICATION.—The roads in Zealand and the other islands are generally very good; but in Jütland, Schleswig, Holstein, and Lauenburg, they are in the most neglected state. The numerous arms of the sea afford an easy communication between the different parts of the kingdom; but the navigation round the northern point of Jütland being always tedious, and sometimes dangerous, from sandbanks and currents, the *Canal of Kiel*, in Holstein, was formed, at a great expense, to obviate these disadvantages. It was commenced in 1777, and finished in seven years. It extends from the town of Kiel, on the Baltic side, westward about 23 miles to the river Eider, which has been made navigable to the North Sea. The canal is 100 feet wide at the top, and 54 at the bottom; has only six locks, and the smallest depth of water is ten feet; so that vessels of 120 tons burden can pass through, and of these nearly 3000 sometimes pass in a year. Including the canal and rivers, the length from sea to sea is 105 miles. The *Canal of Stecknitz* connects the Elbe with the Baltic, by means of the Delvenau, an affluent of the Elbe, and the Stecknitz, an affluent of the Trave. The *Canal of Nestved*, in Zealand, connects the lake Bavelse with the Baltic sea. The *Canal of Odense* connects that city with the sea. *A railroad* has been projected, which is to extend from Altona to Kiel, through Holstein.

ADMINISTRATIVE DIVISIONS.—Denmark is divided into four great provinces:—1. The Kingdom of Denmark Proper; 2. The Duchy of Schleswig; 3. The Duchy of Holstein; and 4. The Duchy of Lauenburg; and each of these is subdivided into bailiewicks, and smaller districts.

The *Kingdom of Denmark* consists of North Jütland, and the islands of Sjælland (Zealand), Fyen or Fünen, Laaland, Langeland, Falster, Moen, Amack, Saltholm, Samsoe, Thorseng, Leso, Anholt, Bornholm, and Färoe; is divided into the *Bailiewicks of* Copenhagen, Fredericksborg, Holbek, Soro, Præsto, Bornholm, Maribo, Odense, Svendborg, Hjoring, Aalborg, Thisted, Viborg, Randers, Aarhuus, Skanderborg, Veile, Ringkjobing, Ribe, and Färoe; and contains the towns of Copenhagen, Roskild, Fredericksbürg, Kioge, Leire, Charlottenlund; Fredericksborg, Helsingor, Fredericksværk, Hillerod, Jægerpriis, Hammermollen, Holbek, Kallundborg, Nykjobing, Soro, Ringsted, Slagelse, Korsoer, Præsto, Nestved, and Herlufsholm—all in Zealand; Stege, in Moen; Ronne, Nexo, and Christianso, in Bornholm; Nykjobing, in Falster; Maribo and Nascov, in Laaland; Odense, Assens, Svendborg, and Nyborg, in Fyen; Rudkjobing, in Langeland; Hjoring, Skagen, Frederickshavn, Aalborg, Nibe, Thisted, Nykjobing, Viborg, Skive, Randers, Grenaa, Aarhuus, Skanderborg, Horsens, Veile, Frederits, Kolding, Ringkjobing, Holstebro, Ribe, Varde—all in Jütland; and Thorshavn, in Stromoe, in the Färoe Islands.

The *Duchy of Schleswig* consists of South Jütland, and the islands of Æro, Als, and Femern, in the Baltic, and is divided into the *Bailiewicks of* Gottorp, Flensborg, Tondern, Apenrade, and Lygumkloster, Hadersley, Hytten and Stapelholm, Husum, Bredsted and Eldersted, Æro, Nordborg, Sonderborg, Femern, and the *separate districts of* Ekernforde and Fredericksort, Cappeln, and Dyppelfærge, &c., and contains the towns of Schleswig or Slesrig, Gottorp, Flensborg, Glyksborg, Tondern, Hoier, Apenrade, Lygumkloster, Hadersley, Christiansfeld, Frederickstadt, Husum, Bredsted, Tönningen, Garding, all in South Jütland; Æroskjobing and Marstal, in Æro; Nordborg, Sonderborg, and Augustenborg in Als; Burg, in Femern.

The Duchy of Holstein is divided into the bailiewicks of Rendsburg, Altona, Reinbek, Trittau—and Tremsbuttel, Rethvisch, Reinfeld and Travendal, Segeberg, Neumunster, Ploen and Arensboek, Bordesholm, Kiel and Kronhagen, Cismar, the county of Ranzac, the lordship of Pinneberg, and the *separate districts of* Preetz, Lutjenburg, Neustadt, Oldenburg, Heiligenhausen, &c.; and contains the towns of Glückstadt, Kiel, Altona, Itzehoe, Heide, Lunden, Meldorf, Brunsbuttel, Rendsburg, Kellinghausen, Ranzau, Elmshorn, Pinneberg, Ytersen, Blankenese, Reinbeck, Vansbek, Travendal, Oldesloe, Segeberg, Bramsted, Neumunster, Ploen, Cismar, and Gromitz.

The *Duchy of Lauenburg*, is divided into the *Bailiewicks* of Ratzeburg, Lauenburg, Steinhorst, Schwarzenberg, and the separate district of Möln; and contains the towns of Ratzeburg, Lauenburg, Steinhorst, Schwarzenberg, and Möln.

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* "The Danes are in a complete state of pupillage. In the practice of the useful arts, in activity, industry, and well-being, they are two centuries behind those nations to whom in numbers and natural advantages of soil, climate, and situation they may be fairly compared, the Scots, the Dutch, or the Belgians. The extreme state of pupillage in which they are kept, not only extinguishes all industry and activity, but, from the host of functionaries who must be employed, where a government attempts to do every thing, and regulates and provides in matters which a people can best manage for themselves, it consumes all their capital, and leaves them nothing to be active and industrious withal. The total number of unproductive persons, such as civil functionaries, naval and military officers, seamen and soldiers, ministers of religion, and condemned criminals, with their families, is 121,444 persons out of a population of 1,240,000, or one to ten. There is one clergyman to every 276; one public civil functionary to every 176. If to these perpetual drains upon the earnings of the industrious in the middle and lower classes, be added the enormous waste of the capital and time of the country in palaces, gardens, shows, and military duties, and such other objects as reproduce nothing, it is not extraordinary that the people are sunk in sloth and poverty, although occupying the richest soil, and most advantageous situation in the north of Europe."—*Laing's Tour in Sweden*, 1838.

§ *Cities and Towns.*

COPENHAGEN (KJOBENHAVN, *i. e.* MERCHANT'S HAVEN), the capital of the kingdom, is situate on the east coast of Zealand, where the small isle of Amack forms a superb harbour. Though in a low situation, it is nevertheless one of the finest cities in Europe, being laid out in regular though narrow streets, and adorned with many fine buildings; such as several royal palaces, churches, hospitals, the town-house, exchange, mansions of the nobility, &c. It contains a University, one of the most flourishing and most richly endowed in Europe, and numerous other literary and scientific institutions and societies. The Royal Library, one of the richest in Europe, is said to contain 400,000 volumes; and the University Library 112,000. Several rooms of the palace are also occupied by an interesting collection of northern antiquities, formed within the last 30 years. It has a royal bank, and manufactures of linen, sail-cloth, woollens, leather; and also extensive dockyards. The shipping belonging to it amounts to about 500 vessels, manned by six or seven thousand seamen; but the trade of the city is confined to the supplying of its own inhabitants with articles of consumpt. Copenhagen is strongly fortified, and is defended by a citadel considered to be impregnable, and several forts, one of which, the Trekroner, is built in the sea, upon a sandbank, about a mile from the city. The population exceeds 120,000. The immediate environs of the city are of great beauty. At the distance of 8 miles N. by W. is *Lingby*, with 1000 inhabitants, greatly resorted to by the wealthy in summer; and to the south of the city is the island of *Amak*, which is so flat that the city may be seen over it. Amak is 9 miles long, and 3 broad, and may be called both the dairy and the garden of Copenhagen; for it supplies enormous quantities of vegetables, milk, butter, and cheese.

Roskild, the ancient capital, 20 miles W. by S. of Copenhagen, is a small town with only 1900 inhabitants, but contains a gothic cathedral, a rich library, and the tombs of the royal family. *Helsingor (Elsinore)* on the west side of the Sound, with 7000 inhabitants, has an artificial harbour, and near it is the strong castle of *Kroneborg*, intended to command the passage. The number of vessels which annually pass, is said sometimes to exceed 13,000. *Frederickshorg*, 16 miles from Elsinore, and 23 from Copenhagen, contains a venerable palace, which is admired as one of the most perfect specimens of Gothic architecture now in Europe. The town occupies several small islands, and seems to rise at once from the deep bosom of a lake.

Altona, in Holstein, on the north bank of the Elbe close to Hamburg, from which it is only separated by a hill called the Hamburgerberg, is a large town, possessing great privileges, a mint, and considerable trade; and contained, in 1835, a population of 26,393. *Kiel*, also in Holstein, contained, in 1835, 11,622 inhabitants; it is the seat of a university, and other literary establishments; has a royal castle, elegant sea-baths, and fine walks, and is situate on a gentle eminence rising from a fine bay. It is a flourishing place, with considerable trade, particularly in grain. The university library, consisting of 100,000 volumes, is contained in the ancient ducal castle. *Glückstadt*, the capital of Holstein, on the right bank of the Elbe, has a population of only 5988 inhabitants; but is a free port, and has a marine school. *Ratzeburg*, the capital of Lauenburg, is a small town with 2000 inhabitants. Lauenburg has 3000 inhabitants, and has a right of levying toll on vessels passing up and down the Elbe.

Schleswig, the capital of South Jütland, is a bishop's see, and a busy trading town, with 10,000 inhabitants, situate at the extremity of a long narrow inlet, named the Sli. Near it is the magnificent castle of *Gottorp*, the residence of the governor of Holstein and Schleswig. *Flensborg*, a fine town, on a gulf of the Baltic, has a school of navigation, a college, a well frequented harbour, and 13,552 inhabitants. *Tönning* or *Tönningen*, is a small seaport town with 2433 inhabitants at the mouth of the Elder.

Odense, in Fünen, is a bishop's see; has a fine cathedral, a lyceum, two libraries, and about 7000 inhabitants. *Aarhuus*, in North Jütland, is a thriving commercial and episcopal city, with a cathedral, a new harbour, and about 8000 inhabitants. *Aalborg*, also in North Jütland, is a commercial and episcopal town, noted for its herring fishery. It has also a college, a school of navigation, and about 8000 inhabitants. *Viborg*, is a very ancient episcopal city in North Jütland, with 3000 inhabitants. *Ribe* is an episcopal city, noted for its cathedral, and for the flourishing trade which it has carried on for some years with Holland. At *Frederickshavn*, near *Fladstrand*, a small town on the east coast of Jütland, to the south of Cape Skaw, the Danish Government are forming an artificial harbour, which will contain 100 vessels at anchor in 15 feet of water: protected by fortifications against any hostile attack.

§ *Foreign Possessions.*

The large island of *Iceland*, in the Arctic Ocean; the west coast of *Greenland*; the islands of *Santa Cruz*, *St. Thomas*, and *St. John*, in the West Indies; *Christianborg*, *Tema*, *Nimbo*, *Friedensborg*, *Adda*, *Kœninstein*, *Binzenstein*, on the coast of Guinea; *Serampore* and *Tranquebar*, in India.

ICELAND is situate between 63° and 67° North lat., and 12° and 25° West long., being about 280 miles in its greatest length, 200 in its greatest breadth, and its area being vaguely estimated at 40,000 square miles. The island is crossed from east to west by ridges of rugged mountains, from which numerous offsets branch out in all directions, and terminate on the coast in high and steep promontories. The interior of the country is a dreary desert, consisting partly of snow-clad mountains, called Yökuls, many of which are also volcanoes, and partly of vast tracts covered with lava, scoriæ, and volcanic sand. In the south-eastern quarter, is an elevated region, estimated to occupy no less than 3000 square miles, covered with ice and snow. The coasts, especially in the west, are deeply indented with *fiords*, in the vicinity of which are fine valleys, where the inhabitants have erected their dwellings, and where factories have been built for the purposes of trade and shipping. The whole island appears to be of volcanic formation, and there are still numerous volcanoes in full activity; there are also many boiling springs, which throw up water and steam to a great height, bogs of boiling mud, and dense columns of steam and smoke issuing from many places. The *Snæfell Yökul*, on the west coast, is the highest mountain, its elevation being 6862 feet; *Hekla*, the most celebrated, but not the most destructive volcano, near the south coast, is 5110 feet high. The climate is generally rigorous, but the winter is sometimes mild. Formerly there were many forests in Iceland, but they have all disappeared; the trees which now exist seldom rise above ten feet, and wood has become very scarce. Corn was also once cultivated to a considerable extent; but the inhabitants now find it more advantageous to attend exclusively to the rearing of cattle. Those on the coast are employed in fishing, which is very productive. Hay is the principal crop, and many of the hills are covered with coarse grass, which affords summer pasture to the cattle. The best inhabited districts are on or near the banks of the fiords; but most of the people live in detached cottages or farms, a certain number of which constitutes a parish, having a church and a Lutheran minister. The common food is butter, milk, and fish; fresh meat and rye bread are holiday fare. The Iceland moss is also a common article of food; but coffee, wine, and other luxuries are imported for the use of the wealthier classes. The exports consist of dried fish, whale oil, salted mutton, elder down, and sulphur. Turf is the common fuel. Copper and iron are found, but not worked. Reindeer, originally imported from Norway, have greatly multiplied, and live in a wild state. The Icelanders are the genuine descendants of the Old Scandinavians or Norsemen; and their language is considered as the standard of the Scandinavian tongues. Elementary

education, and even a certain degree of better information is generally diffused among them. Children are taught by their parents, with the assistance of the parish priest. There is but one high school in the island, at Bessasted, near *Reikiavik*, the capital, which is a small town of 600 inhabitants, on the south-west coast. The island is under the charge of a Stiftamtman, or governor, appointed by the King of Denmark for five years, with a salary of £300, and who resides at Reikiavik. The clergy are under the charge of an archdeacon, who resides at *Garde*, near Reikiavik. *Skalholt*, formerly the capital, and *Holum*, the see of a bishop, on the north coast, are both fallen into insignificance. The population is supposed to amount to 51,000.

Helgoland, or *Heligoland* (Holy island), a group of two small islands in the German Ocean, 25 miles from the mouth of the Elbe, belonged formerly to Denmark, but was taken in 1807 by the British, who still retain it. The main island consists of a cliff, which rises almost perpendicularly from the sea, to a height varying from 90 to 170 feet, and is surmounted by a lighthouse, situate in 54° 11′ 84″ north lat., and 7° 53′ 13″ east long.; and joined by a bottom of rock to a low uninhabited down, where there are two good harbours. Between the main island and the other which is named Sandy island, is a road, where ships may anchor in 48 fathoms. The inhabitants, about 2400 in number, live entirely upon the cliff, and subsist chiefly by fishing and acting as pilots. They are Frieslanders; retain their ancient manners and customs; and obtain turf, wood, and other articles of subsistence from Hamburg and Cuxhaven, in exchange for fish. The island was formerly very much larger, but has been, in the course of the last thousand years, reduced by the sea to the existing fragments.

SWEDEN AND NORWAY, OR THE SCANDINAVIAN PENINSULA.*

SWEDEN and NORWAY form together one geographical region, under the general name of the Scandinavian Peninsula, and are governed by the same king; but, in every other respect, they are perfectly distinct and independent kingdoms, and are inhabited by different nations. We shall therefore describe the natural features and productions of both kingdoms together as one country, and divide the moral, political and statistical part of our description into two portions, under the heads of *Sweden* and *Norway*.

ASTRONOMICAL POSITION. — Between 55° and 71° N. lat., and 4° and 32° E. long.

DIMENSIONS. — From the Naze of Norway to Cape Nordkun in 28° E. long. the length is about 1100 miles; but from Falsterbo in the province of Malmo to the same point, it is 1190 miles. The greatest breadth, which lies under the 60° N. lat., is about 470 miles. The superficial area is reckoned to be 6652 square Swedish miles, equivalent to 292,700 square English miles; of which 170,240 belong to Sweden, and 122,460 to Norway.

BOUNDARIES. — *Northern:* — the Northern Polar Ocean. *Southern:* — the Baltic Sea, Cattegat, and Scaggerack; *Eastern:* — Russian Lapland, Gulf of Bothnia, and the Baltic. *Western:* — the North Sea and Northern Atlantic Ocean.

GENERAL ASPECT. — Scandinavia forms a large peninsula, connected with the rest of the European continent by a broad isthmus of more than 200 miles, which separates the Gulf of Bothnia from the Arctic Ocean. Throughout the length of the peninsula, from the Varangerfiord in the north-east, to the Scaggerack in the south-west, a line of lofty and rugged mountains, hills and table-lands, extends for 1100 miles, forming the water-shed between the Atlantic ocean, and the basin of the Baltic Sea. Their culminating point is on the borders of Dalerne, between 61° and 64 N. lat. To the north of 63° N. lat. the mountains form one ridge, rising precipitously on the western side, and gradually approaching nearer to the ocean as they proceed northward, till at last they rise from its very shores. To the south of 63° the elevated mass forms a table-land, in some parts perfectly level, and in others rising into hills, and having its eastern and western declivities furrowed by deep valleys. From nearly the same point several ridges branch off to the east and south, where they enclose the great lakes Wener, Wetter, Mälar, Miösen, and others; and some of them ultimately unite in forming the table-land of Smaland, which has an average elevation of 500 feet above the level of the sea.

This mountain mass rises abruptly from the shores of the ocean, and attains the greatest elevation of its crest, which has a medium height varying from 800 to 2000 feet, at a distance nowhere more than 100 miles inland, but in most places, and particularly towards the north, within fifty, or even twenty miles of the coast; while on the opposite or eastern side, the country descends in long slopes, interrupted by small level plains, and intersected occasionally by ranges of hills, towards the shores of the Gulf of Bothnia and the Baltic, along the former of which the coasts of Sweden, for fifteen leagues inland, rise to no greater an elevation than 300 feet above its level. Farther inland the country rises from 300 to 800 feet, where it reaches the mountains. More than a third part of the peninsula has an elevation exceeding 2000 feet above the level of the sea, and 3696 square English miles of its surface are above the limits of perpetual snow. Of these elevated and snowy regions nearly 3000 square miles of the latter, and almost the whole of the former, are in Norway. In Sweden, one third of the country has a less absolute elevation than 300 feet, while little more than a twentieth part of its surface exceeds 2000; and Schonen, the most southerly portion of the kingdom, is actually low and flat, apparently a portion of the great plain which includes the neighbouring regions of Denmark, Pomerania, and Mecklenburg. Of Norway, on the contrary, more than three fourths have an elevation exceeding 2000 feet above the level of the sea, and are unfit for cultivation, except in a few

* *Statistik von Schweden nach offentlichen Documenten*, von Carl af Forsell, ubersetzt Obon A. G. F. Freeze; Lubeck, 1835.

A Tour in Sweden in 1838; comprising Observations on the Moral, Political, and Economical State of the Swedish Nation; by Samuel Laing, Esq. London, 1839.

"On the Statistics of Sweden;" by Mr. George Stephens. *Quarterly Journal of Agriculture, Edinburgh*, VI. 92.

Excursions in Denmark, Norway, and Sweden, &c.; by Robert Bremner, Esq. London, 1839.

sheltered places. More than an eighth part is above 800 feet higher than the sea-level; about a tenth part rises to 800 feet; and only about one thirtieth is below 300 feet. The lowest tract, that which does not rise to 300, is situate along the shores of the Christiania Fiord. The coasts of the peninsula are lined with an intricate labyrinth of islands and rocks, called by the Swedes *Skargard*, and by the Norwegians, *Skjargard*, that is Reef-defence; which vary in size from a mere point of rock to more than a mile in length, and rise with bare and craggy cliffs from the bottom of the sea. The coast of Sweden is irregular in its outline, and is much indented with bays and small gulfs; but in Norway immense fiords or firths penetrate the country in all directions, extending sometimes to two hundred miles in length, and varying in breadth from a hundred yards to several miles. These indentions form the most remarkable physical feature of the kingdom, and afford the means of easy access, and a plentiful supply of fish, to its most inland recesses.

The southern part of Schonen presents a great resemblance to Zealand, with which it was once probably united. But beyond 56° N. lat., and behind an elevated land still covered with large-leaved timber, which traverses Schonen from S.E. to N.W. the country acquires an entirely new appearance, and assumes the character which it retains through almost the whole of Sweden. Solid rocks, clothed partly with lichens, and partly covered with a slight layer of earth, which permits only the growth of pines with horizontal roots, or of the birch, are formed into plains, hills, or high mountains. The valleys among the hills are watered by numberless rivers, which form in many places long and narrow mountain lakes, corresponding in their form and extension with the direction of the inclined strata of the rocks. The solid rock, which so often bursts through the thin layer of soil, gives a peculiar character to the hilly plains, where a naked cliff is often seen rising amidst corn-fields and meadows, and a foaming river, enclosed in a deep rocky bed, is heard making its way over fragments of rock. The greater part of Sweden is indeed intersected by mountain chains in the most varied directions, which enclose in some places cauldron-shaped valleys, in others only narrow ravines. The bottoms of the valleys generally contain lakes, while the ravines are traversed by foaming streams, lined on both sides by rugged walls of rock. The more gentle acclivities, which enclose the broader valleys, are covered with thick pine forests. Sometimes the gloomy pine gives way to the more agreeable birch, or retires and encloses a group of fields and meadows. If Sweden be hilly, Norway may fairly be called mountainous. That country is indeed occupied by the great mountain chain of the peninsula, whose branches enclose valleys of various forms, the bottoms of which are generally occupied by firths or lakes, bordered, in the lower parts, with meadows and corn-fields, which extend upwards as far as the first acclivities of the mountains. Where the ground becomes steeper, these are succeeded by the pine forests, which raise their tall heads among inaccessible cliffs; and above all are seen the tops of the mountains covered with snow, or enveloped in clouds. The rivers, rushing down the steep declivities, form numerous, and often stupendous, cataracts, where they bound over precipices, which extend across the full breadth of the stream; and upon the rocks which border them saw-mills are boldly placed, in order to have the advantage of the headlong force of the current. During the more severe season of the year these northern regions are clothed in a very different, though not less beautiful vesture. Fields of ice take the place of the lakes, whose margins are then strongly contrasted with the dark green colour of the never-fading pines. The snowy tops of the mountains glancing in the sun, and the blue tint of their icicles, produce views of indescribable beauty, which are greatly enhanced by the almost constant serenity of the dark blue sky. But the splendour of the north, arrayed in its winter garb, appears to most advantage in the star-lit nights, when the aurora borealis is reflected by the bright fields of snow.

In both Sweden and Norway, however, there are very extensive tracts, and even whole provinces, which are marked by the greatest degree of wildness and barrenness, in the midst of which the traveller is apt to forget the agreeable impressions produced by the scenes already described. This is the character generally of Lapland; but such regions occur also among the mountains farther south, and particularly on the alpine plains, which, under the name of Kolen, form the boundaries of Dalecarlia and Norway, where a person may travel for days without finding a single human habitation.

GULFS, BAYS, AND STRAITS. — The smaller bays, gulfs, and firths are too numerous to be particularised; but of the larger, we may mention the *Christiania Fiord*, entering from the Scaggerak; the *Bukke Fiord*, *Hardanger Fiord*, *Trondheim Fiord*, *Vest Fiord*, all on the west coast of Norway; the *Porsanger Fiord*, *Tana Fiord*, and *Varanger Fiord*, on the north coast; and the *Strait of Kalmar*, between Oland and Gothland. The *Maelstdm* or *Moskoestrom*, long celebrated as the most appalling whirlpool in Europe, is situate near the southern extremity of the Lofoden Islands, beginning between

Moskoenæs, and exhausting itself between Varoe and Rost. The whirlpool is occasioned by the rushing of the tide among these islands, which impede its course, and cause it to make a circular sweep or whirl, where the great inequalities of the bottom increase the violence of its current.

CAPES. — *Nordkun*, the most northerly point of the Continent of Europe; *North Cape*, on the island of Mageroe, the most northerly point of Europe, not continental; *Lindesnæs*, or the *Naze of Norway*, the most southerly point of that kingdom.

ISLANDS. — 1. *In the Baltic.*—*Gottland*, or *Gothland*, 80 miles long and 30 broad, forming a great table of limestone, full of the fossil remains of extinct molluska, between 80 and 150 feet above the level of the sea. The island is highest on the west side, and slopes gradually to the east, but with no inequalities deserving the name of hill or valley. The climate is remarkably mild; the people do not reckon on having more than eight days of sledge driving in winter; and here, in lat. 57½° N. the grape, the white mulberry, and the walnut, ripen in favourable seasons and in good situations. The island abounds with forests and game, cattle, sheep, and goats; it is well watered, and contains much arable land, with rich pastures and meadows. The principal exports are wheat, rye, deals, and lime, some wool and salted meat.—Population in 1835, 40,671; of whom 4268 lived in *Wisby*, the capital, and 36,403 in the country. — (*Laing.*) *Oland*, or *Oeland*, 86 miles long, greatest breadth 10, separated from the mainland of Sweden by a narrow strait, partakes of the character of Gothland, being composed of schistose, silicious and calcareous rocks, with pleasant and well watered valleys, rich in pasturage and meadow ground, and supporting much cattle. *Faro*, a small island at the nothern extremity of Gothland. *Gottska Sando*, a small island, 25 miles N. of Faro. *Grason* and many others to the E. and N.E. of Stockholm. *Holmon*, near Umea. *Huen*, a small island in the Sound, 15 miles N. of Copenhagen, noted for the castle of *Uranienburg*, which was erected by, and some time the residence of Tycho Brahe. 2. *In the Ocean.*—The *Lofoden Islands*, a group which extends to the westward of the Vest Fiord, between 67° and 69° N. lat. They are of a rugged and dismal appearance, resembling piles of rocky mountains, covered with snow, and rising abruptly from the sea to a height varying from 100 feet to 4000. The most considerable are the *Andoen*, *Langoen*, *Hindoen*, *East Waagen*, *Wst Waagen*, *Flagstadoe*, *Moskenæsoe*, *Værøe*, *Rost*. Along the coast to the northward are the large islands of *Senjen*, *Hvaloen*, *Ringvadsoe*, *Vanen*, *Sorøe*, *Stiernoe*, *Seiland*, *Mageroe*, and many others, all classed under the general name of *Lofoden-Mageroe* by the French geographers. The *Vigten islands*, a small group, in 65° N. lat., are noted as the place from which Rolf or Rollo set sail for the conquest of Normandy. Further south are the large islands of *Smoelen*, *Aveiloen*, or *Trojen*, and *Hitteren*, to the west of Trondheim; *Hosteroen*, *Storoen*, *Bommeloe*, *Carmoe*, and many others, opposite the Handanger and Bukke Fiords. *Bären*, *Bear*, or *Cherry* island, in the Northern Ocean, nearly midway between North Cape and Spitzbergen, is also considered as belonging to Norway. It is a small island, 30 miles in circumference, entirely composed of secondary sandstone, and horizontal shelly limestone, with a bed of coal, from two to four feet in thickness, of good quality, in the sandstone. The island is uninhabited.

RIVERS. — The *Tornea*, which rises in the mountains of Norrland, flows through the Lake of Tornea, and falls into the northern extremity of the Gulf of Bothnia. Its principal affluent is the *Muonio*, and the two rivers together form the boundary between Swedish and Russian Lapmark.

Proceeding along the coast southward from Tornea, we meet successively with the rivers *Calix* or *Kalix*, *Ranea*, *Lulea*, *Pitea*, *Byske*, *Sildut* or *Skellefteå*, *Umea* and *Windel*, *Gidea*, *Angerman*, *Indals*, *Ljusne*, and *Dal*; besides many smaller streams, which all flow into the Gulf of Bothnia. The *Mottala*, which flows out of Lake Wetter, through the smaller lakes of Boren, Roxen, and Glan, and falls into the Baltic below Norrkoping.

The *Gotha* is the outlet of Lake Wener, and falls into the Cattegat at Gotteburg. Lake Wener receives many large streams, the principal of which is the *Klar-elf*, which rises in Norway, to the east of the Dovre-fjeld, and flows through the Lake of Fämund.

The *Glommen* rises in the mountains to the south-east of Trondheim, and has its sources in two small lakes, the one of which is 3000, and the other 3627 feet above the level of the sea. The parent streams fall into the Lake of Oresund, below which the united stream passes through several other lakes, and, after a course of 400 miles, falls into the Scaggerack, below Frederickstadt. This is the largest river of Norway; even at the distance of 200 miles from its mouth it is described as a fine majestic stream; but the navigation is obstructed by numerous falls, and on the melting of the snows, or after great rains, it acquires immense volume and rapidity, and sometimes occasions frightful devastations. It is also named the *Stor-elf*, or *Great River*. Its principal affluent is the *Vermen-elf*, the outlet of Lake Miösen. One of the principal feeders of that lake, the *Louger*, sends also another branch to the Lake Lessoe, whose outlet flows north-westward to the North Sea, at Molde, thus forming a complete cut through the great mountain range. During great floods part of the waters of the Glommen finds its way to the Lake Wener by the *Wrango-elf*. The *Drammen* runs from Lake Tyris Fiord to the Christiania Fiord. The *Tana*, in East Finmark, which forms the north-eastern boundary between Norway and Russia, has a course of 300 miles, and runs into the Tana Fiord.

LAKES. — The Scandinavian Peninsula contains a great number of lakes, most of which are long and narrow, corresponding with the valleys in which they are formed; and many of these are not only very deep, but also at the great elevation of more than 2000 feet above the level of the sea. Besides these, Sweden contains three lakes of the first class :—

The *Wener*,* the largest lake in Europe, after those of Ladoga and Onega, is 90 miles in length, by 86 in its greatest breadth, covering an area of 2136 square miles. Its surface is 144 feet above the level of the sea; and its depth is generally from 40 to 50 yards, though in one place it is 96, and at the southern extremity, only 24. Its borders are studded with islands, and the north-eastern shores are bold and richly clothed with wood. It receives about 30 tributary streams, and discharges its surplus waters by the Gotha. The *Wetter* measures 82 miles in length, and 16 at its greatest breadth, but is generally much narrower, and contains only 830 square miles. Its surface is 288 feet above the level of the sea, and its depth varies from about 160 to 440 feet. Owing however to the violent blasts which come from the adjacent mountains, the navigation is dangerous; and even in calm weather it is liable to sudden agitations. The *Mälar* or *Maelar*, extends east and west, from Stockholm to its western extremity, nearly 70 miles. It has a most irregular figure, is crowded with islands; and presents throughout the most varied changes of beautiful scenery. It communicates by a narrow strait at Stockholm, with an arm of the Baltic Sea, crowded, like the lake, with innumerable islands, and forming a very intricate navigation of 60 miles between the open sea and the capital. *Hielmar*, W. of Stockholm, 38 miles in length, with a breadth varying from 12 to 1 or 2; and its greatest depth 66 feet. The lakes Mälar and Hielmar are surrounded by fertile fields. The *Sillien*, in the government of Stora Kopparberg; the *Storjon* in Jemtland; the *Stor Uman*, and *Stor-Afven*,

* The names of these lakes are sometimes found in English books and maps in the form of *Wenern*, *Wettern*, *Malaren*, *Hielmaren*; but these are merely the adjective forms of the names, to which *lake* is the substantive.

In Wester Bothnia; the *Lulea* and *Torneå-Trask*, in North Bothnia. The *Miösen*, 80 miles in length, the *Farsund*, the *Tyris*, the *Oresund*, 2400 feet above the level of the sea; and the *Ryst* are the principal lakes in Norway.

MOUNTAINS. See *Scandinavian System*, antè, p. 156.

CLIMATE.—The Peninsula extends through sixteen degrees of latitude, from 54° northwards, far beyond the Arctic circle, and a large portion of it, therefore, adjoins the confines of perpetual winter. It possesses, nevertheless, a great diversity of climate, and the lowlands of Sweden are generally warmer than their northern position would indicate. The temperature is, of course, much modified by the elevation of the ground, so that, while at North Cape, by the sea-side, the average temperature of the year is 32°, 150 miles further south, but 1470 feet above the level of the sea, it is 4° or 5° lower. The summer is short but warm and dry. At the head of the Gulf of Bothnia the summer ends in September, while on the other hand it begins only in May or June; but, while it lasts, the heat of the sun, which remains so long above the horizon, is intense. The winters, however, are long and severe, extending from November to April or May, and sometimes even to the middle of June. Frost and snow generally commence in November; the lakes and the rivers, and even the Gulf of Bothnia are frozen over, and the whole country is covered with a deep layer of snow. Even at Stockholm, which, from its low insular situation, enjoys a comparatively mild climate, the thermometer often sinks, in winter, to 28° below zero; and a hundred miles further north, or beyond the 61st parallel, the mercury freezes in the tube of the thermometer, so that it is impossible to make observations with it. In Jemtland, and round Tornea, the climate is so rigorous that the lakes sometimes continue frozen all the year, and the people are obliged to cut their crops green, to prevent them from being buried beneath the new falling snow; yet Ariskutan in Jemtland, 63° N. lat. and 4919 feet above the level of the sea, is not considered to be within the line of perpetual snow, although some parts of it are never free. But to the south of Stockholm the climate is much milder, though still subject to extremes of temperature; and even in Schonen, the most southerly province of the kingdom, the average temperature of the year is only 45°. At Stockholm the mean temperature in January is 24°, in July 64°, and the greatest heat ever recorded was 96·8°. The atmosphere of Sweden is generally pure, and the ravages of contagious diseases are never experienced. The beauty of the warm and dry summer, which dissipates the frost and dissolves the snow at once, causes vegetation to burst forth with luxuriant vigour, and brings it to perfection with magical celerity, makes people almost forget that there is no continued spring, and that the winter will again overtake them, before they can have fully appreciated the delights of the blooming country. The shortness of the summer is, however, in some measure compensated by the longer continuance of the sun above the horizon, which, in the north, brings the corn to maturity in six or eight weeks. This bright summer calls forth all the splendour of the northern flora, which, though not remarkable for variety, is rich in those plants which are peculiar to the country and climate. In closeness and verdure the flowery carpet of the northern spring, far exceeds that of the south. On the other hand, the pure bracing cold of a northern winter invigorates the active powers of life, and is found, at least by the natives, to be far less oppressive than the moist piercing cold of more southern regions. But, within the last seventy or eighty years a gradually progressive change of seasons has been remarked in Sweden; winter continually encroaching on spring, and summer on autumn. The mean quantity of rain which has fallen annually during 36 years has been 17½ inches, which indicates a drier, and consequently a warmer climate than that of Britain.

The climate of Norway is less cold, but more moist and changeable than that of Sweden, and generally less salubrious. Among the mountains of the interior, the winter is long and severe; but towards the western coasts the cold is little felt, except when the east wind prevails; the bays and firths never freeze; but the saline exhalations from the sea, the fogs, the rains, and the tempests extend their pernicious influence far into the country. The weather, however, is generally steady, being either good or bad for considerable periods. The summer is delightful, and very warm. In the narrow glens the noon-day heat is oppressive; but the morning, evening, and midnight hours are agreeable, and of a nature peculiar to this country. Summer lingers long, and is, in general, an unbroken series of beautiful days; but, as in Sweden, there is no continued spring; as soon as the snow disappears, vegetation bursts forth at once, and advances with astonishing rapidity. From lat. 58° to 59° the average temperature of Norway is about 45°; and there is no

permanent snow. Between 59° and 60° the average is 44°; and between 60° and 61° it is 43° on the coast, and 41° in the interior. From 61° to 62° it is 40°; and in the same proportion, it continues to decrease as we proceed towards the North Cape, where, as already mentioned, the average temperature of the year is at the freezing point, though the winter is not more severe than at Trondheim, except when the north-east winds blow. At 60° N. lat. the line of perpetual snow is about 5800 feet above the level of the sea; at 61°, 5600 feet; at 62°, 5300 feet; at 64°, 4800 feet; at 67°, 3900; at 70°, 3600 feet; and at 71°, North Cape, 2400 feet.

The winter, however, though rigorous, is pleasant and salubrious; for although the air is cold, yet it is dry and bracing, except immediately upon the south-western coasts. This is the most favourable season for commercial activity and mutual intercourse; the hard snow affords an easy passage over the rugged country and the frozen lakes and gulfs; and it is then that out-door amusements are kept up in active succession. The most disagreeable part of the year is in April and May, when the melting of the snow renders the country almost impassable, and occasions dreadful ravages by inundations, and by the fall of rocks and earth from the mountains. Travelling then becomes impracticable, till the month of September, when the snow is nearly all melted, and the summer heat has lost its force.

GEOLOGY AND MINERAL PRODUCTIONS.—The mountain nucleus of Scandinavia is composed of primitive and transition rocks, the former of which greatly predominate. The oldest and the most widely distributed rock is gneiss, granite being rare, and seldom appearing on the surface; and in the gneiss are frequently enclosed beds of fine white granular marble or limestone, and also of hornblende. The beds of gneiss present throughout their whole extent very remarkable contortions and wavings, which are extremely striking, as they are seen exposed to view for a great distance, and quite bare, without being concealed by vegetation or forests. The next primitive rock is mica-slate, which, though very extensively distributed, is, upon the whole, less so than the gneiss, with which it is frequently interstratified. It forms also many of the islands on the coast of Norway, and of the mountains in the interior. Associated with it are numerous strata of limestone, which sometimes assumes the character of dolomite; strata of quartz often of great thickness and extent; clay-slate of a lighter colour than that of the transition formation; chlorite-slate, and hornblende-slate, are also found, but in less abundance than the gneiss and mica-slate, of which they seem to be, in many cases, only accidental varieties. These primitive stratified rocks are widely distributed over the whole country; and even where they are covered by newer formations, the dip and position of the strata seem to indicate that they are the foundation on which the latter repose. Granite, though rare, is found underlying and elevating these primitive strata, intersecting them in the form of veins, and spreading over them. But between the position of the granite of Sweden and that of other countries, there is this striking difference: that, while in the latter the granite is usually covered by the stratified formations, and only appears in the summits of lofty mountains, in Sweden, on the contrary, it appears in the form of low hills; in the level parts of the country lies close to the surface; and on the coasts forms numerous little bays, creeks, and rocks running out into the sea. Diallage, porphyry, greenstone, and other plutonic rocks are also found occasionally associated with the primitive formation. Tracts of country belonging to the transition formation occur in many places, and particularly on the west side of the Christiania Fiord, through the interior of Aggershuus, and in the Swedish provinces of Dalerne, Herjeadalen, Jemtland, Schonen, and Gothland, where they cover a great extent of country; and on the shores of the Wener lake the series is fully developed. Near Tornea, transition grey-slate and black compact limestone appear, though little more then fragments among the primitive rocks. This formation likewise includes the islands of Gothland, Oland, and Bornholm; and abounds, especially the limestone, in organic remains. Secondary formations are far less widely distributed than the two more ancient classes; and it is chiefly in Schonen and Gothland, that they are to be traced. Round Helsingborg there is a small coal basin, said to extend also under the sea; and coal is found also in Bornholm. The chalk deposits, including the greensand, occur in Schonen where they traverse nearly the whole province from Cape Kulloberg to Degeberga and Magleham; and extend northward to Carlshamn and Morbog in Bleking. Above all these there are immense deposits of sand and shells in various parts of the country. Shells are found at various elevations far up the country, both in Sweden and Norway, but particularly in the latter, where they occur at 400, 500, and even 600 feet above the level of the sea. The sand occurs in ridges, extending

many miles in length, and from 50 to 100 feet high, named *Oasar* or *Sandoasar* by the Swedes. These banks are found in Upland, Westmannland, Nerike, and Smaland, with a general direction from N.N.E. to S.S.W., and are often so level on the top that public roads are carried along them. The existence of these masses of sand has given rise to various opinions among geologists respecting their origin; but our space prevents us from giving any account of their speculations.* It is now believed to be an ascertained fact, that certain parts of the coasts of Sweden are progressively rising above the level of the sea; but what renders this phenomenon still more curious is, that not only does the rise not take place along the whole coast at the same yearly rate, but that certain points, instead of a progressive elevation, experience a gradual lowering of level, whilst others remain stationary. The points of elevation occur between Calmar and Gefle, and as far north as Tornea; while the coast of Schonen is gradually subsiding. No traces of volcanic action are known to exist, except that lava occurs on an island not far from Bergen; and on a mountain in the Bukke Fiord, fire is said to appear sometimes. Earthquakes occur, though rarely.

Next to agriculture, the mines of Sweden constitute her chief source of wealth. At Kolmorden the limestone assumes the appearance of a fine green and white marble. The alumslate likewise yields something to the national industry; for in some places it is found to contain from 14 to 16 per cent. of combustible matter, so as to serve for fuel in preparing alum and lime. Coal, in small quantity, is found in the south; but iron is scattered in lavish abundance throughout the country; in various parts there are hills of the richest iron ore, and even islands of a similar description are met with on the coast. Iron, however, is not confined to particular spots, but is diffused over large spaces, and constitutes a kind of broad belt round the centre of Sweden. Copper is also found, but the mines are less productive now than formerly; and those of silver scarcely repay the cost of working them. All the mountains of Norway, and especially those of the south, contain a great number of minerals and metals, among which may be mentioned gold, silver, iron, copper, and cobalt. The silver mines are situate at Kongsberg, where large masses of the native metal have been found; and they also abound with other mineralogical curiosities. There is a gold mine at Edswold, in the district of Rommarge; and mines of lead and silver are wrought at Jarlsberg. The copper mines are chiefly situate in the northern parts of the kingdom, and the principal iron mines are in the south. The principal cobalt mines are at Modum and Fossum. There is a mine of plumbago at Engledal; there are alum mines at Egeberg near Christiania; and quarries of granite, marble, millstone, whetstone, slate, and clay, are wrought in various parts of the kingdom.

SOIL AND VEGETATION.—Sweden is not more fortunate in its soil than in its climate. It cannot boast of any of those deep rich alluvial deposits, which elsewhere usually occupy a large portion of low and well-watered countries. Coarse sand or gravel, but partially covered with a thin layer of fertile soil, forms in general the champaign country; and, besides the woods, which occupy more than three-fourths of its surface, a large proportion of the country is covered with lakes, morasses, rivers, and with inconceivable numbers of boulder-stones, or isolated rocks, of every size. The surface has been thus numerically represented:—Woods, 137,420; lakes, marshes, &c., 21,900; meadows, pastures, &c., 7,350; arable land, 3,480; total, 170,150 square miles. The soil of Norway is very similar in character to that of Sweden; in both, the vegetation being abridged by the length and the severity of the winter, the soil remains always poor; and the paucity of alluvial tracts, the prevalence of rock, seldom at any great depth, and often reaching the surface, materially detract from the quality, as well as the quantity of the soil. In some parts, however, it is very rich; and the valleys in particular are celebrated for their luxuriant fertility; but even there, much of the soil is thin, and obstructed by rocky knots rising above its surface.

As the more favoured portion of Scandinavia so nearly resembles Britain in respect of both soil and climate, much sameness in their vegetable products is to be expected; and accordingly, it is calculated that about three-fourths of the plants which grow in Sweden, and even in Lapland, are found in Britain. The distribution, however, of these, in a country extending through more than 15° of latitude, and beyond the polar circle, would be a curious subject of inquiry, did our limits permit us to enter into details. The Peninsula is particularly noted for its extensive forests, which consist principally of beech, oak, maple, spruce-fir, Scotch fir, aspen, and birch;

* "Scandinavia;" in the *Edinburgh Cabinet Library*, Vol. II. chap. viii. *Edinburgh New Philosophical Journal*, XXV. 292; and *Lyell's Geology*.

and not less than nine-tenths of the surface of the country are occupied with woodlands. These are, however, little better than a desert waste; for the timber from the inland and northern provinces is rendered valueless by the difficulty and expense of carriage; while in other places the remaining trees are small, and thinly scattered; and the towns are so inadequately supplied with wood for fuel, that it has been deemed requisite to prohibit its exportation. The very small proportion of arable land produces articles of the same kind and quality as those of Britain; but the production of each is affected by the elevation of the soil, as well as by the difference of latitude. In the southern districts of the country, an elevation of 500 feet above the level of the sea is found to have the same effect on the climate and vegetation as 175 miles of north latitude, a thousand feet are equal to 300 miles, and two thousand feet, to 630 miles; but the effect is of course proportionately more rapid and powerful as we advance towards the north. In the province of Schonen, grapes, mulberries, sweet chestnuts, walnuts, and melons, ripen in the open air; apples, pears, plums, and cherries, ripen as far north as 63°; gooseberries and many other kinds of berries, several degrees further. At the North Cape, potatoes are cultivated in the gardens; at Alten, 70° N. lat., barley is cultivated; and at Enontekeis, both barley and turnips, which have yielded nine good crops during the last thirty years (1800–30.) Rye ripens in Schonen as early as in Germany, but cannot be cultivated to advantage farther north than 66°; wheat and hops are limited to 62°; and oats seldom ripen in a higher latitude than 62°. Natural oak is not found farther north than 61°, but, if planted in a sheltered situation, will grow as far as 63°; ash and willow as far as 62°; elm and lime trees as far as 61°. Beech does not grow wild in Sweden farther than 57°; but in Norway it reaches two degrees farther; fir grows in Lappmark till within 2800 feet of the line of perpetual snow; spruce till within 3200. Within 2800 feet of the snow the pine ceases, and the birch alone forms the low woods, which with a short knotty stem and stiff rough branches, seems to set itself to resist the violence of the northern blasts. Its light green lively hue still continues to gratify the eye, after other trees have ceased; but it soon becomes so low, that a man standing upon a piece of turf can look over the trees. Proceeding farther north, or higher up the mountains, the birch forests become more rare; and the heat of the summer's sun being left to act without obstruction on the sides of the mountains, gives rise to a great abundance of alpine plants. The rein-deer moss covers the more arid plains of Lappmark. At 2000 feet below the snow line, even the low birch-woods disappear, and fish are no longer to be found in the waters. Bushes of a dark-coloured dwarf birch grow 400 feet higher, and raspberries ripen, but not beyond this point. Higher up, even the birches disappear; the streams are covered with brown, rather than green mountain plants; and the whortleberries are the only kind which ripen. The Laplanders do not willingly pitch their tents higher up than within 800 feet of the snow; for there food fails even for the rein-deer. In the higher plains, however, which are partly occupied by the perpetual snow, scattered mountain plants are seen here and there in the brown swampy ground; and even amidst the more level tracts of the snow itself, tufts of these may be seen shooting up from the springs which ooze from the rocks; and at 200 feet above the snow line, some lichens still sustain a feeble existence. But, after these, all vegetation ceases.

On the coast of Norway, vegetation is less curbed by the rigours of winter than in corresponding parallels on the shore of the Baltic; but, in consequence of the great general elevation of the country, cultivation is limited to a few places, such as the low strips of land on the shores of the Gulf of Trondheim, the Christiania Fiord, and the Scaggerack, and in the bottoms of the narrow valleys which penetrate the rocky mass. Round Christiania, in lat. 60°, oaks, ashes, elms, limes, and maple, are very common; at Laurvig, in lat. 59°, the beech continues to thrive; cherries, apples, pears, and apricots, ripen in the open air; and roses flower, though nearly a month later than in the north of Germany. Even in lat. 62° 47′, at Molde, pears, plums, and sometimes even chestnuts, ripen. Gooseberries and hazel-nuts are found at 65°, and oats, pease, beans, and flax, are cultivated up to the same parallel. Hemp and rye are grown to 66°; and the ash and spruce-fir reach the same point. At Trondheim, however, cherries and plums no longer ripen, pears and apples require great care; the oak scarcely continues to live; and to the north of the Trondheim Fiord, the climate and vegetation become truly arctic. The spruce-fir is scarcely found beyond 67°; the few remains of natural wood consist of birch and Scotch fir, and even these only along the deeper firths and large streams, where the climate is less rigid, and the winters milder and shorter than in many of the inland parts of Sweden; so that the hazel and some other hardy trees attain a higher latitude.

Extensive forests of fir and pine cover the eastern declivity of the Norrska-fiellen, and a great part of the mountainous country to the east of the range; and along the Trondheim Fiord, and in the valley of the river Namsen, there are also great forests of fir and pine.

ANIMALS. — These are nearly the same in Scandinavia as in the other northern countries of Europe. The principal wild beasts are:—the bear, a large and formidable animal, now mostly confined to the wilder and more northern provinces; the badger, found throughout the middle and the south of Sweden; the wolverine, a ferocious and untameable creature, found chiefly in Dalarne and the Lapland mountains, but even there now become very scarce; the wolf; five varieties of fox; the lynx; marten, otters, seals, hedgehogs, obters, squirrels; several species of mice and rats; the lemming, which at irregular intervals leaves its retired abodes in the mountains of Lapland and proceeds in countless numbers to the cultivated districts, where it commits great depredations, eating up the corn and grain, and every sort of vegetation in its way; the beaver, still found on the banks of the solitary lakes and rivers of Lapland; and the elk, now also confined to the least frequented districts. Of the domesticated animals the principal are: — the rein-deer, upon which the Laplanders chiefly depend for their subsistence and clothing; horses, beeves, goats, sheep, and swine. The horses are small, but swift and hardy, and those of Norway are remarkably sure-footed, a quality which admirably fits them for traversing the rocky mountain paths of that country; but the shortness of the summer, and the consequent difficulty of procuring a supply of food, limits the numbers of all the domestic breeds. The principal birds are: — the golden eagle; sea eagle; falcons of various kinds; the great horned owl, the snowy owl, and other varieties; the capercailzie, or cock of the woods, once common in Britain; the black cock, ptarmigan, partridge, woodcocks, snipes, swans, geese, ducks, widgeon, teal, and many others.

SWEDEN.

PEOPLE. — The inhabitants of Sweden may be divided into three races: — the *Swedes*, *Lapons*, or *Laps*, and *Fins*. 1. The *Swedes* are a branch of the same great family as the Danes and Norwegians, and speak a dialect of the same language, considerably modified, however, by long political separation, and by the national enmity which has existed between the people inhabiting the two sides of the peninsula. Books require to be translated from the one language to the other; but the vulgar tongue, the language of the peasantry in the two countries, differs not much more than broad Scotch from vulgar English. The roots of words, the construction and idiom are the same in both languages, or have a common origin. Swedish prevails from the Sound to the river Kalix, at the head of the Gulf of Bothnia, where it meets the Quan or Finn language, and is spoken by about 3,100,000 people. The Swedes are represented as a brave, hardy, generous, and enterprising people; distinguished by a happy union of courage and steadiness, possessing fine genius, and natural probity of disposition. In Schonen, Gothland, and the adjoining provinces, light hair, blue eyes, and fair complexions predominate; the men have faces somewhat pale, high foreheads and long chins; are of a middle size, with a muscular frame, and mild aspect. The Dalecarlians, or Dalesmen (*i. e.* people of the valleys, or, as we should say in Scotland, the Highlanders), who live to the north-west of Stockholm, are a hardy, bold, and industrious race; have always been remarkable for their loyalty, and in consequence of their tried patriotism, and the numerous services which they have rendered to the government, they enjoy the privilege of taking the king's hand whenever they meet him. But notwithstanding their natural good dispositions, it is a singular and embarrassing fact, that the Swedish nation, isolated from the mass of the European population, and almost entirely agricultural or pastoral, having no great standing army or navy, no extended commerce, no afflux of strangers, no considerable city but one, and having schools and universities in a fair proportion, and a powerful and complete church establishment, undisturbed in its labours by sect or schism, is, notwithstanding, in a more demoralized state than any other in Europe, more demoralized even than any equal portion of the dense manufacturing population of Great Britain. — (*Laing's Sweden*, 108.) Drunkenness seems to be their prevailing vice; brandy is resorted to on all occasions. This unfortunate habit is the fruitful source of many evils both moral and physical; and Forsell ascribes to it more than three-fourths of all the crime, want, and misery which prevail in the country. In 1835, one person out of every 114 of the population was accused, and one out of every 140 convicted, of some criminal offence; and in the five years from

1830 to 1834, one person in 49 of the inhabitants of towns, and one in 176 of the rural population, had been punished each year for crimes. There was no rebellion in the country, nor resistance to obnoxious laws, as in Britain and Ireland; but, on the contrary, all the offences recorded, involved greater moral delinquency than the breach of a regulation or conventional law of the State.—(*Laing*, 110.)

In 1751, the population amounted to 1,785,727; in 1800, to 2,347,303; in 1820, to 2,584,690; in 1835, to 2,983,144. If the population maintain its present rate of increase it will double itself in about fifty years. It is, however, very unequally distributed over the country, becoming always thinner towards the north. In Malmolan it is about 111 to the square mile; in Gothia, it varies from 34 to 68; in the central provinces, from 11 to 45; in Norrland, from 2½ to 5; and in Lapland it is less than 1. The relative population of the whole kingdom is only about 18 to the square English mile. The total number of towns does not exceed 86; and their inhabitants in 1830 amounted to 280,269, or only a tenth of the whole population.

2. The *Laplanders*, or *Laps*, inhabit the northern provinces of Sweden, as well as of Norway, and have been represented as a people of short stature, with a swarthy or yellowish complexion, and disagreeable physiognomy. In the northern parts of Lapland, however, the people are much taller than in the south, yet their height does not exceed 5 feet 3 inches; and their dark complexion seems to be as much the result of constant residence in smoky huts as of natural constitution. The Lap mountaineers, who live almost constantly in the open air, have a skin only slightly dark; the greater part of the females are even tolerably fair; and among both sexes are seen persons of as agreeable complexions as among the other European nations. Their good temper is unfailing; and their cheerfulness never forsakes them. Their honesty is proof against every temptation; robbery and murder are crimes almost unknown; they are laborious and habitually temperate; but cannot resist the temptation of drinking strong liquors when they come in their way. The Laps are distinguished into four classes:—mountaineers, foresters, fishermen, and beggars. The first live by the produce of their herds of reindeer; spend the summer among the mountains, and the winter on the plains, transporting from place to place their families, their herds, and their huts. The second class are stationary; their herds of reindeer are less numerous than those of the former; and they occupy themselves in the cultivation of land. The fishermen have still fewer animals, and while they are themselves employed in fishing, they send their wives and children to take care of their herds on the mountains. The begging Laps live by charity, or by hiring themselves as labourers to the Swedish peasantry. The rigour of the climate, the misery which they frequently suffer, and the general unfruitfulness of the women, prevent the increase of the population of these wild regions.

3. Few of the *Finns* are now subject to Sweden; but in the northern provinces of Norway they have extended themselves as colonists. They are an industrious, robust people, differing, morally and physically, from the Laplanders, as much as the grown man from the child; though they are probably descended from the same original stock. The Laplanders still call themselves Finns, and are so called by the Norwegians; and in their own language both people call themselves *Suome* or *Same*, and the old Russian name for them both is *Sum*.

RELIGION.—With the exception of a few individuals in Stockholm and the other principal towns, the Swedes are all Lutherans, and Lutheranism is the established religion of the State. Other sects are now allowed the free exercise of worship; but Catholics and all other dissenters are excluded from the Diet and from the higher offices of State. In the whole kingdom there are 2490 congregations, viz. 1147 country parishes, and 129 town churches, with 1214 annexed chapels in the larger parishes. The whole establishment consists of 3193 clergy, and 3753 sextons or parish-clerks, organists, and church servants. The hierarchy consists of one archbishop of *Upsal*, and eleven bishops, viz. of *Lund*, *Gotheborg*, *Wexio*, *Calmar*, *Linkioping*, *Skara*, *Carlstadt*, *Wisby*, *Westeraas*, *Strangnæs*, and *Hernosand*; 70 archdeacons, and 102 probsts (provosts or deans.) The archbishop's income is rated at about £2000 sterling a-year; the bishops at more than £600 each; and the archdeacons and probsts, from £400 to £700 each. None of the inferior clergy have less than £120, while many have as much as £300, besides parsonages and glebe lands. The sextons have also manses and livings furnished by their parishes. The clergy as a body have been always distinguished for piety and morality; and yet among their people religious feeling and moral purity are at a very low ebb; their religion, indeed, has become little better than a system of rites and ceremonies. There is, however, a spirit of religious enthusiasm spreading in the north of Sweden, especially

among the new colonists, or squatters in Lapland, which the clergy have attempted to put down and extinguish. These religionists are called Læseren, or readers, from their reading the Scriptures; but they have not as a sect any internal communion. They are, however, numerous; their numbers are said to be increasing, and their meetings for preaching are attended by people from great distances. The patronage of the church is not entirely at the disposal of the Crown. Candidates are appointed by the consistory to preach before the congregation of the vacant cure; and academical distinction, long standing in holy orders, and in the service of the church, are taken into consideration, and allowed a preference. Of three candidates thus proposed, one is approved of by the congregation, and appointed by the Crown, unless where private favour and influence interrupts the ordinary course, as often happens. Bishops are appointed on a similar principle, the clergy voting for those of their own body whom they think best qualified, and the Crown generally appointing one of the three who have the largest number of votes. The Catholics, who are all foreigners, throughout the kingdom do not amount to 2000, the greater part of whom reside in the capital. The Swedenborgians, the only sect which the country has produced, are also comparatively few; and the Jews, who scarcely exceed 1000 individuals, have four synagogues, at Stockholm, Gotheborg, Norrkoping, and Karlscrona.

EDUCATION. — Of the whole population, including even the Laps, it is reckoned, that the proportion of grown persons unable to read is less than one in a thousand. This general diffusion of elementary education is ascribed to the zeal of King Gustavus Vasa, (1523–1560), and his immediate successors. John III., in 1574, ordered that the nobleman who had no knowledge of book learning should forfeit his nobility; Charles XI., in 1684, required the clergy to have every Swedish subject taught to read; and made it a law that no marriage should be celebrated unless the parties had previously taken the Lord's Supper; and that none should be admitted to the communion-table who could not read and was not instructed in religion. Parish schools, however, are found only where there happen to have been lands or rents bequeathed for their endowment; and these in some parishes are ambulatory, in others fixed. It is supposed that more than the half of all the parishes have no schools; but the deficiency is supplied by the people themselves, who teach their children at home, in the leisure hours of their long winters. The king, however, in his speech at the opening of the present Diet, 1840, has recommended the establishment of a primary school in every parish. In the provincial towns there are gymnasia, or high schools, in which the youth are prepared for the universities. They are under the care of the bishops, and, besides the higher branches of Greek and Roman literature, their course often embraces the oriental languages and the leading doctrines of theology. There are two universities, one at Upsal, and the other at Lund. In these the teachers may be divided into three classes: — 1. Professors; 2. Adjuncts, or privileged teachers in different sciences, who give instructions privately or publicly in detail to the students, and who are expectants of professorships; and, 3. The masters of modern languages, exercises, and other inferior branches. Of the theological faculty there are four professors at Upsal, and four at Lund; of the judicial faculty, two at each; of the medical and surgical, five at each; of the philosophical and literary, fourteen at Upsal, and ten at Lund. Each faculty confers degrees, after examinations sufficiently strict to make an Upsal degree a highly respectable honour for men of science; and the degrees are conferred in different terms, denoting the merits of the candidate, as granted with applause, commendation, or merely by sufferance. The instruction consists of public or private courses of lectures, for the former of which the student pays nothing, and of repetitions, disputations, and written treatises for examination by the professors and adjuncts. Before a student is admitted, he undergoes an examination by the adjuncts, or younger teachers, as to the knowledge he has acquired at the gymnasium; and if a youth not duly qualified is sent up to college, the rector and teachers of the gymnasium subject themselves to a professional rebuke. The revenues of the University of Upsal are derived partly from estates bestowed upon it by the Kings Gustavus-Adolphus and Charles IX., and by Queen Christina, and partly from crown tithes; those of Lund are derived from tithes only. The highest salaries of the professors amount, on an average, to £194 sterling yearly; the adjuncts and lower teachers have only about £42 sterling yearly; but they receive fees from those who take instruction from them. No person can enter into the clerical, legal, or medical professions without taking his degree; and in the department for mines and other branches of government business, a degree in philosophy is required before a person can study, as a candidate for office, the particular science required in these employments. The stu-

dents on the books at Upsal in an average year amount to 1453, of whom 336 are students of theology; 325 of law; 86 of medicine; 365 of philosophy; and 341 who have not fixed on a profession. The students on the books at Lund amount to 632; of whom 141 theology; 105 law; 56 medicine; 169 philosophy; and 161 not fixed to a profession. But of the numbers on the books, only 844 are present at Upsal, and 421 at Lund, in each year. The great majority of these are the sons of peasants, citizens, and clergy; but of the nobility not one-half take a high university education; yet all the high places in the state, and even the offices in which uneducated men are not qualified to act, are filled as a matter of right by this uneducated class. — (*Laing*, 240, &c.) The total number of professors, teachers, and schoolmasters in the kingdom is reckoned to be 763.

GOVERNMENT. — The government is a sort of mixed constitution, in which the executive and administrative departments are managed by an hereditary king and his servants, while the legislative is vested conjointly in the King and a Diet of four chambers, elected by the nobles, clergy, burghers, and peasants. The number of noble families in the kingdom is reckoned about 2400, the head of each of which is by right a member of the Diet, but seldom more than 400, and rarely 500, take any part in its proceedings. The clergy have 60 representatives, including the archbishop and bishops, of whom the Primate is always president. The burghers are elected by 85 cities and towns; Stockholm returning 10, Gotheborg 3, Norrkoping 2, and the rest 1 each. The peasantry have between 140 and 150 representatives, chosen by districts; and these, as well as the burghers, are required to possess a certain amount of qualification in property, and each of their chambers has a president appointed by the King. During the session each member of the last three orders receives a small pecuniary compensation, paid by his constituents, the amount of which is voluntary. The Diet meets at intervals of five years, and then sits for three months certain; but more time is generally required for the dispatch of business. The majority of each chamber determines the questions brought before it, and a majority of the four orders settles the determination of the Diet, except in propositions for altering the fundamental laws, when unanimity of the orders is required; and no such measure can be carried in the same Diet in which it is proposed, but is reserved for deliberation at the next Diet. The King has a veto upon their acts, and the right of proposing such measures as he may deem beneficial to the country, and may call together an extraordinary Diet whenever he may think it necessary. Practically, the power of the Diet resides in the nobility and clergy, who exercise it in such a way as tends most to promote their own interest; and, altogether, the constitution is a machine, of which the parts are curiously constructed for checking each others movements, while the propriety, or even almost the possibility, of their moving together, has been lost sight of. Many of the constituencies consider the Diet as little better than a mockery of free institutions, which they would willingly renounce by not electing at all, were they permitted to do so. Though the form and the elements of a free government certainly exist, which may in time grow into a popular constitution, such does not at present exist. Between the nobility and the peasants there is no sympathy; the former are almost entirely dependent for the means of subsistence upon public or official employments, and consequently in complete subservience to the Crown, while the peasants are also too poor, and their life too laborious to allow them much time or opportunity for attending to public business. In the Diet before the last, consisting of 718 members, only 164, viz. 17 nobles, 25 burghers, and 122 peasants, were not visibly connected by office with the executive or the Court. The House of Nobles represents about 13,500 individuals, and property valued at £16,562,500; the House of Clergy, 14,000 individuals, and £221,000; the House of Burghers, about 66,000 individuals, and property of £7,730,000; and the House of Peasants, 2,000,000 of individuals, and £38,646,000. Besides these classes, there is a fifth class in Sweden, consisting of 72,000 individuals, with property valued and taxed at £13,029,000, who are not represented at all. These are people who have acquired money, and purchased estates for their families. They are not peasants, nor burgesses, clergy, nor nobles, and, consequently, are neither represented in the Diet, nor eligible as representatives.

But the most important branch of the constitution is the Council of State, which consists of a minister for justice, one for foreign affairs, six other councillors, and the chancellor of the court, and is attended by the four secretaries of state, who have the four departments of home affairs; military and naval affairs; finance, trade, customs, and post-office; and affairs of the church, general education, and the poor. The King can do nothing except in military and diplomatic affairs, without consulting

this council, which is obliged to keep a protocol of its proceedings, in which each member has a right to explain his opinions. The King alone has the right to determine, after hearing the opinion of the council; but, should his determination be contrary to law, the members are bound to insert their protest in the protocol, for which they are answerable to the Diet. In the military, diplomatic, and higher offices of State, persons holding public employments may be dismissed by the King; but in all the lower civil offices no functionary can be dismissed without inquiry and judgment given by the courts of law. But the judges of the supreme court may be dismissed or continued in office by the Diet, who at each session elect a jury for inquiring into their conduct and qualifications.

The law is administered by 264 courts of first instance, called Hered's Courts, one for each of the hereds or districts into which the country is divided. In some of the towns there are two of these courts; and there are, besides, a mining-college court, two academical courts, and some other local burgh courts. From these primary courts appeals are carried to the Lagman's Courts; and from these again to the Hof or Supreme Courts, of which there are three, called the Swea or Swedish, the Scania, and the Gotha, established in different parts of the kingdom. There is no direct appeal from the decisions of these Hof Courts; but, by petition to the King, their decisions may be revised in the Council of State, and confirmed or reversed. All criminal cases affecting life or property are tried in the Hof Courts, no lagman having any criminal jurisdiction. The ecclesiastical courts judge in cases of divorce, of which the average annual number is 164. The executive and administrative functions of judges and magistrates are kept quite distinct, and are not vested in the same persons as in Britain. The judge has nothing to do with the apprehending, safe keeping, or accusing of the criminals in his district: the proper executive officers are the *fogden* and the *lansmen*.

FINANCES. — Relatively to its means, Sweden is much more heavily taxed than either England or France, yet the public revenues raised by taxation do not amount to £2,000,000 sterling. According to the report of 1832, the sum was 20,247,339 dollars banco, or £1,687,278 sterling, of which more than one half was raised by a direct land tax, the remainder by customs, and other indirect means. But, notwithstanding their limited means, the Swedish government have contrived, since 1814, not only to pay off the whole of their foreign debt, and a great part of their home debt, but also to expend £3,200,000 on public works. The pressure of the public taxes is, however, very unequal. The agricultural, that is to say, the poorest and least influential class, are overloaded, and obliged to pay annually, in public and local taxes, at least one third of the produce of their land. If, moreover, it be considered that these twenty millions of dollars are levied in a country where there is scarcely any commerce, and very little money in circulation, some notion may be formed of the oppressiveness of their public burdens.

ARMY AND NAVY. — The standing army amounts to 2580 artillery, 4705 cavalry, and 25,409 infantry; total, 32,694; and consists of two kinds of troops, the enlisted and the indeldta. Of the former class there are only about 6000, all of whom are stationed in the capital or its environs. The indeldta soldiers are a sort of military colonists, drawn from and maintained by the various districts of the kingdom. They are regularly trained to military duties, for which purpose they are periodically assembled in companies and regiments; but are permitted to marry, and, when not on active service, support themselves and their families on their little farms. Each soldier has a house, barn, cow-house, and six acres of land for his subsistence. These men, when not engaged in war, cultivate their land, or are employed by Government in constructing roads and fortifications, draining marshes, digging canals, or executing other works of public utility, and receive no pay except when in actual military service. But, besides the regular army, there is also the beväring, or militia, consisting of every male between twenty and twenty-five years of age. They are regularly exercised about three weeks every year, and liable to be called into active service in case of war. This body amounts to 106,603 men, making the whole disposable military force 139,294. No man is admitted into the standing army or the navy without a certificate of good character from the clergyman of his parish; the consequence of which regulation is, that there are fewer depredations committed by the Swedish soldiers, either at home or abroad, than by those of any other nation. In 1836, the total number of officers and men employed in the military navy was 25,691. The principal part of the navy consists of 250 gun-boats, for the protection of the coasts; besides which there were also, in 1833, 11 ships of 74 and 84 guns, 8 frigates, 4 cor-

vettes, 6 brigs, with several smaller vessels. There are three naval stations for ships of the line, at Stockholm, Gotheborg, and Karlscrona; the flotilla of gun-boats is stationed chiefly at the two former places, which, communicating by the great Gotha canal, afford the means of uniting, without exposure to disasters by sea, or attack from an enemy. The seamen are drawn by conscription from the maritime provinces; each district on which the lot falls being required to furnish a seaman, to assign to him a portion of land which he cultivates, and upon which he lives when not on active service. When in port or on service the seamen receive pay from the Crown. The total naval expenses do not exceed £100,000 a-year.

PRODUCTIVE INDUSTRY.—1. Since the beginning of the present century the *agriculture* of Sweden has experienced great improvement; the Swedes have become exporters of grain to a considerable extent; and as seven-ninths of the population are engaged in the cultivation of the soil, and great part of that is still unproductive from want of cultivation, the quantity might be increased many fold. The whole annual produce of the soil is estimated at £9,937,500. Within a few years land has risen considerably in value, from the exertions of the agricultural societies established in the provinces, and the great interest which the landed proprietors now take in the management and improvement of their estates. Every proprietor or farmer has a right to distil spirits, the refuse of which alone enables him to keep a large number of cattle, whereby the quantity of dung is very much augmented. The distiller is not bound to use any particular kind of grain, and therefore a considerable quantity of potatoes is used for that purpose. The cultivation of the potatoe has been indeed the mainspring in the improvement of Swedish agriculture; not only has it done away with the necessity of using the bark of trees as a miserable substitute for bread, but has occasioned the public and private magazines to be completely filled with grain. The greatest difficulty which cultivators have at present to contend with, is the want of a market for their surplus stock.—*(Stephens' Quarterly Journal of Agriculture*, VI. 100, *&c.)* Both horses and horned cattle are small in Sweden; the former, however, are active and spirited, and the latter afford excellent milk and beef. The sheep are generally of an inferior kind, but great pains have been taken to improve them by crosses on the Spanish, French, and English breeds. Towards the 63° sheep disappear, and are superseded by goats, which are most numerous in the woodland districts of Dalerne and Nordland. The seed-time is in May, the harvest in August, and as the fine weather is short, and warm, the labours of the farmer are then very constant and fatiguing; while a great number of people are required to get in the crops, for whom there is no employment during winter, when the country is all covered with snow. This will ever remain an obstacle to agricultural improvement, especially in the northern districts. The average of the harvests throughout the kingdom, for seven years, has been found to be three good, three middling, and one a failure; the average rate of fecundity is 4¾ grains for one.

2. *Fisheries.*—Both the sea and the fresh waters swarm with fish, which afford employment and subsistence to many of the inhabitants. The fresh water contains perch, pike, salmon, trout, grayling, char, roach, bleak, and eels; but of all these, the salmon is the most important object of industry and trade. They are more abundant in the northern rivers than in those of the south, and on most of the rivers fisheries are established. The sea fish are not less numerous or important. Herrings are sometimes caught in incredible numbers at Gotheborg, though at other times they entirely forsake the coast. In the Baltic, the stromming fishery is a very important branch of industry; in the quantity of food it produces, in the amount of capital and industry which it employs, and in the scale and outfit connected with it, it may bear a comparison with the herring-fishery elsewhere. The stromming is about the size of a sprat, but a much more delicate fish. They are cured like herrings; and a barrel of salted stromming is as necessary for every household on the Swedish side of the Peninsula, as a barrel of herrings is on the other. They are also used extensively over all Finland and the north of Russia.

3. *Mines and Minerals.*—Next to agriculture, the mines of Sweden form the chief source of her wealth. Throughout the kingdom, iron exists in great abundance. The mountain Gellivara, in Lappmark, 1800 feet high, is one mass of the richest iron ore; but its situation beyond the polar circle (in lat. 67° 20′ N.), far from the sea, and in an unpeopled wilderness, deprives it of its real value. In various other places, however, there are similar hills; and even islands of compact iron ore are met with on the coast. About the year 1683, the quantity of iron forged in Sweden, in one year, amounted to 9690 tons; but in the course of the next century a great increase

took place. Between the years 1751–60, the average annual produce amounted to 328,766 Swedish pounds, and it has continued very nearly the same to the present time; though the trade is represented as being now in a state of great activity and prosperity. The quantity of bar-iron produced in the year ending 1st November 1839, is stated at 276,000 skip pounds, and of manufactured iron, 33,600; which, added to 11,600 of the latter, and 126,700 of the former, on hand at 1st November 1838, made a total of 448,000 skip pounds. Of this amount, 304,896 pounds were exported; 283,500 in the shape of bar, and 21,390 manufactured; the prices during the year having been ten bank rix dollars, or 25s. 10d. sterling the skip pound, which is equal to 280 lbs., or a quarter of a ton avoirdupois. The forests of Sweden occupy more than one-half of its surface, and the abundance of wood thus supplied is of the highest utility in working their mines and smelting the ores. Swedish iron is superior in ductility and malleability to any other — a superiority which is attributed, in part, to the use of wood instead of coal or peat in the process of smelting. The number of mines in Sweden is 586, and of these no fewer than 361 are close together in in the heart of the kingdom, in Nerike, Westmanland, and part of Dalarne. Danemora, the principal iron mine, produces yearly about 4000 tons of metal, which is particularly adapted for the manufacture of steel. Next to iron, copper forms the most important of the mineral riches of Sweden. The principal mine has long been at Fahlun, but the produce scarcely exceeds 1,000,000 lbs. The most important of the other copper mines are those of *Hakanbo*, in Nerike; *Nyakopparberg*, in Nyköpingslan; *Atvedaberg*, in Linköpingslan; *Areskuta*, in Jamtland; and *Ryddarshytta* and *Bastnas*, in Westeraaslan. The whole copper produced in Sweden in 1824 was 814 tons, of the value of £51,777 sterling. Gold is also found at Fahlun, and in some other places, where the produce was too small to pay the expense. Silver is likewise produced, to the extent of about 3000 marks annually; but the expense of working the mines is so great, that it is proposed to relinquish them. Fahlun likewise produces sulphur and vitriol; in Schonen, near Helsingfors, there is a small bed of coal; and cobalt, to the value of about £12,000 sterling, is also produced.

4. *Manufactures.*—These are in a very low state. Every art and trade has its own corporate rights and monopolies, which operate as a complete bar to improvement; and of the total population only about one-seventieth part are engaged in manufactures and trade. Coarse linens are the chief manufacture. Machinery for spinning wool and cotton has been introduced, but the experiment is too recent to warrant a decided opinion as to its ultimate success. The other articles of manufacture are such common articles as are required to supply the ordinary wants of the people.

5. *Commerce.*—The general trade of Sweden is in nearly as low a state as its manufactures. The principal exports consist of articles of native produce, in their raw or manufactured state: iron ranks first, then timber, copper, tar, and grain. The principal imports are sugar, coffee, tobacco, salt or smoked fish, salt, leather, hemp, silk, cotton, and wine, chiefly articles of domestic comfort or luxury. Mr. Laing states the amount of the mercantile shipping at only 30,439 tons (p. 157); but Forsell states it as having been, in 1831, 137,514 tons, or 1122 vessels. The principal mercantile ports are Stockholm and Gotheborg. The currency consists almost exclusively of paper money. The first bank was established in 1657, and for some time conducted its business on the right principles of banking; but it was a government institution, and, in the urgent necessities of the State, the temptation to over issue was too great to be resisted. Vast issues were made without adequate means of redemption, till at last the value of the bank paper fell to one-third of its nominal value in silver. This rate of depreciation is now permanent; and the consequence is, that gold and silver have almost entirely disappeared; scarcely any coin except small pieces of copper is to be seen; and the country is suffering under the evil of a universal paper currency, consisting of bank notes of the smallest denomination, some even so low as six cents.

INTERNAL COMMUNICATION.—1. *Roads.* These are in some instances made by government, but in general they are maintained by the farmers and landowners of each province, who meet at stated times, and assess themselves for the purpose. They are generally kept in very good order. On all the great roads, at every mile or mile and a half Swedish, or from 7 to 10 miles English, there is a post station, to which the peasants are obliged to bring their horses on certain days by rotation, to be in waiting to convey travellers, who are generally carried in carts or carioles.

2. *Canals.* For internal water communication Sweden has remarkable facilities in her four great lakes, as well as in her rivers and numerous canals. The principal canal is that of *Gotha*, which has been formed at the expense of £720,000 sterling, to connect the Wener and Wetter lakes with the Baltic, near Soderköping. It was opened in 1832; is 80 feet wide, and 10 deep, so as to admit of the passage of vessels of considerable burden. The *Canal of Trollhatta*, commenced in 1793, and finished in 1800, was formed to avoid the falls of the Göthaelf, and consists principally of a series of locks rising above each other, on the face of the declivity over which the river falls. It was dug out of the solid

rock at great expense. These two canals, with the Gotha river, and the intervening lakes, form a complete navigable communication across the middle of Sweden; and their advantages will no doubt be found far more than commensurate with the expense. The *Canal* of *Arboga* is the oldest in Sweden, and connects the lake Hielmar with the Mälar. The *Canal of Stromsholm*, in the government of Westeraas, forms a communication between the Hielmar lake and the lake of Barken, on the borders of Storra-kopparberg. The *Canal* of *Sodertelge*, finished in 1819, connects the Mälar with the Baltic to the north-east of Stockholm. There are some other less important canals, such as that of *Waddo*, which shortens the navigation from the Gulf of Bothnia to the Baltic, and enables vessels to avoid the dangerous navigation through the Aland islands; and the *Canal* of *Almare Stak*, undertaken to facilitate the navigation between Stockholm and Upsal. Several other works of the same kind have been projected, and some even commenced, particularly to render the rivers of Norrland navigable, so as to give access to the immense forests of that region.

ADMINISTRATIVE DIVISIONS. — Sweden is divided into twenty-four *lans*, or governments, which are subdivided into *foyderier*, or districts. Swedish geographers, however, divide the country into three large regions, namely, *Norrland*, or the North country; *Svealand*, or Sweden proper; and *Gothaland*, or Gothia; each of these comprising several lans, as stated in the following table:—

Governments.	*Ancient Provinces.*	*Cities and Towns.*
SVEALAND.		
Stockholm,	Upland and Sodermanland,	STOCKHOLM, Carlberg, Marieberg, Drottningholm, Nortelge, Sodertelge, Vaxholm.
Upsala,	Upland,	Upsala, Sigtuna, Lofsta, Elfkarleby, Sodersfors, Danemora.
Westeraas,	Westmanland,	Westeraas, Sala, Norberg, Arboga, Köping.
Nyköping,	Sodermanland,	Nyköping, Strengnass, Gripsholm, Eskilstuna.
Oerebro,	Nerike and Westmanland,	Oerebro, Nora, Askersund.
Carlstad,	Warmeland,	Carlstad, Christinehamn, Ombergsheden, Oskarstad or Arvika, Philipstad.
Storra-kopparberg,	Dalarne,	Fahlun, Hedemora, Avesta, Mora, Husby.
Gefebord,	Gestrikland and Helsingland,	Gefle, Soderhamn, Jarsso, Huddiksvall.
GOTHALAND.		
Linköping,	Oestergothland,	Linköping, Norrköping, Wadstena, Soderköping, Medevi, Skeninge, Motala.
Calmar, Jonköping, Kronoberg,	Smaland,	Calmar, Westerwik, Borgholm. Jonköping, Ædelfors, Ekeajo. Wexio.
Blekinge,	Blekinge,	Carlscrona, Ronneby, Carlshamn.
Skaraborg,	Westergothland,	Mariestad, Lidköping, Skara, Vanas.
Elfsborg, Gotheborg and Bohus,	Dasland and Wr. Gothland,	Wenersborg, Boras, Trollhattan, Amal. Gotheborg, Marstrand, Ny-Elfsborg, Uddevalla, Stromstad.
Halmstad,	Halland,	Halmstad, Warberg, Laholm,
Christianstad, Malmohus,	Schonen,	Christianstad, Engelholm, Cimbrishamn. Malmo, Ystad, Lund, Landscrona, Helsinborg, Ramlosa.
Gottland,	Gottland island,	Wisby.
NORRLAND.		
Norrbotten, Westerbotten,	Westerbotten & Lappmark,	Pitea, Lulea, Arjeplog, Gellivara, Jukkas, Jarvi, Umea, Asele, Sorsell.
Wester-Norrland,	Medelpad and Angermanland,	Hernosand, Sundsvall.
Jamtland,	Jamtland and Herjeadalen,	Oestersund, Hede, Ljusnedal.

§ *Cities and Towns.*

1. *Svealand.* — STOCKHOLM, the capital of the kingdom, is situate upon a strait which connects the Mälar Lake with an arm of the Baltic, in north lat. 59° 20′, and east long. 8° 13′. The principal public buildings are placed upon three islands, named the Stockholm (castle island), Riddarholm (Knight's island), and Helge-ant's holm (Holy Ghost Island), connected with each other and with the mainland on both sides by several bridges, through which a current is constantly flowing from the Mälar to the sea. The greater part of the private houses are built on the mainland, which, on the north side, slopes gradually and beautifully backward from the shore, but, on the south side, rises in bold abrupt cliffs, where the white houses nestle among shading trees. There are many public buildings, bridges, squares, and monuments, in good taste; and the fine churches, quays, and royal palace, give the city an air of magnificence; but the private houses are, in general, of very ordinary appearance. In the centre of the town the streets are narrow, crooked, and dirty; but elsewhere they are wide and straight. The palace is a modern building, in the Italian style, and for architectural beauty and effect surpasses all the other city palaces in Europe. It stands on the Stockholm. The other principal buildings are the cathedral, the bank, and the house of the Diet. The city contains a great number of scientific and literary establishments, the principal of which are: — the academy of sciences; the academy of belles-lettres, history, and antiquities; the Swedish academy, for the cultivation of the Swedish language and poetry; the agricultural academy, the royal school of engineers; the college of mines; the Carolinian medico-chirurgical institute; the royal library, one of the richest in the north of Europe, &c. The population in 1830 amounted to 80,621; but in June 1838, only to 77,500. On an average of ten years preceding the latter date, the deaths exceeded the births by 895 yearly; and yet the city does not appear to occupy an unhealthy situation, nor are the people of the lower classes over-crowded or badly lodged. In 1838, the capital contained only 2306 persons of the manufacturing class, including their labourers; 781 merchants, or wholesale dealers; 1817 retail shopkeepers; 1036 tradesmen of all kinds, employing 1605 journeymen, 2099 apprentices, and 465 other persons; and 721 seamen, including shipmasters; total, 10,819 persons living by productive industry. The consuming class consisted of 2794 persons in civil, 4258 in military, and 544 in clerical and educational employments; 1556 nobles, of both sexes; and 11,461 persons of condition, of both sexes, having property; altogether, 31,432 persons who had a visible means of subsistence; leaving 46,068 persons without capital, trade, or fixed means of living. — *Laing*, 75, &c.

Upsala, 41 miles N.N.W. of Stockholm, built on a gentle height, and part of an adjoining plain, in a very level and fertile country, is one of the most beautiful old-fashioned cities in Europe. The

larger portion of its 15,000 inhabitants depend more or less on the ancient and highly celebrated university, which still flourishes among them. Only a few are engaged in manufactures, and in the little trade carried on by means of the Sala, a sluggish stream which runs through the city towards the Mälar, and affords the means of steam navigation to Stockholm. The new university is a handsome building in the simple Florentine style, built of fine freestone; the cathedral is a lofty building of brick, but the finest of all the ecclesiastical buildings in the kingdom. The university was founded in 1478, and is usually attended by 800 students. *Old Upsala (Gamla-Upsala)*, consists chiefly of a few huts grouped round a set of tumuli or barrows, which are popularly considered to be the tombs of Odin, Thor, and Freya; and, on the top of a little mount close beside them, stands a venerable church, said to be 1800 years old, and to have been a place of pagan worship during many centuries. — *(Bremner.)* *Danemora*, 25 miles N. by E. of Upsala, in a level and well cultivated country, is noted for its iron mines, which yield on an average 4000 tons of metal yearly, and have been equally productive since their first discovery in 1470. Others of the Swedish mines are said to yield a larger quantity, but their iron will not bear comparison with that of Danemora, the superior quality of which is ascribed by Berzelius to the presence of the metal Silica, by others to the presence of Manganese, while many assert that it is almost entirely owing to the excellence of the process by which it is made. The mines are the property of a company, which ranks among its members some of the wealthiest men in Sweden. *Sigtuna*, a very ancient town 17 miles S. of Upsala, still contains the ruins of pagan temples. *Oerebro*, at the west end of lake Hielmar, a pretty little town, with an agricultural society and other establishments. *Arboga*, a town with 3000 inhabitants, to the west of the Mälar Lake, is the entrepot of the iron to be shipped for Stockholm. *Carlstad*, at the north side of the Wener Lake, upon a small island, formed by the two mouths of a magnificent river, the Klar-elf, is rather a handsome town, with some trade, and 2500 inhabitants. *Fahlun*, 120 miles N.W. of Stockholm, consists of long, silent, and wide streets, with good houses, and 4000 inhabitants, in the midst of a region of copper-mines, extending about 28 miles in length, by 7 in breadth. This wide space is inclosed and partly penetrated by rocks of reddish granite, which towards the middle gradually merge into a micaceous rock, the greater part of which is composed of iron and copper pyrites. For many centuries these mines were perhaps the most productive in the world, yielding annually eight millions of pounds of pure metal. Their present annual produce is thus estimated: — Copper, 4500 skip pounds; gold, 250 ducats; silver, 500 marks; lead, from 100 to 150 skip pounds; vitriol, from 600 to 800 tons; ochre, generally 1000 tons; brimstone, 20 to 30 skip pounds. The ore is not rich; the best is said to yield 20 per cent.; but the poorer sort only 1½ per cent.—*(Bremner).* The number of mines does not exceed 500.—*(Laing.)* *Gefle*, 96 miles N. by W. of Stockholm, a seaport town on the Gulf of Bothnia, with fine quays, two churches, several broad, good streets, and 8000 inhabitants. Next to Stockholm and Gotheborg, it is the most important trading town in the kingdom. *Waxholm* or *Vaxholm*, a small town, with batteries and other military works, the seaward key of Stockholm.

2. *Gothaland.* — *Gotheborg (Gottenburg)*, a large commercial town on the left bank of the Gotha-elf, near the sea, 245 miles W.S.W. of Stockholm. It stands in a wide hollow surrounded by rocky heights, and consists of regular, wide, and paved streets, with lofty flat roofed houses, all built of stone, or well stuccoed brick. It is the residence of a bishop, and a military governor; has 25,000 inhabitants, and a very active commerce. The Gotha is navigable from the sea to the falls of Trollhattan, where the navigation is continued by a canal, alongside of the river, which here rushes down a deep gorge, a height of 190 feet; and between the canal and the river there is a range of saw-mills, belonging to a Glasgow company. *Linköping*, 105 miles S.W. by W. of Stockholm, near the south side of Lake Roxen, is a well-built episcopal city, with considerable trade, and a cathedral considered the finest in the kingdom, after that of Upsala. *Norrköpping*, 83 miles S.W. by W. of Stockholm, is a flourishing commercial and manufacturing seaport town, on an arm of the Baltic, with 10,000 inhabitants. Its cloths are considered the best in Sweden. *Jonköping*, the seat of the Hof-court of Gothaland, is a considerable town, with 4000 inhabitants, at the south end of the Wetter Lake. *Calmar*, a small episcopal city, on the west side of the Strait, formed by the island of Oeland, has a considerable maritime trade, and 5000 inhabitants. *Carlscrona*, on the south-east coast, is a strong town, built upon several islands, with a fine harbour, the ordinary station of the Swedish fleet; it contains docks dug in the rock, building slips, and formidable batteries, which render it almost impregnable towards the sea. Its citadel, upon an islet, is reckoned a masterpiece of military architecture; its granite walls are 20 feet high, and mounted with 200 pieces of cannon. — Population, 12,000. *Malmo*, a fine town, with considerable trade and manufactures, nearly opposite to Copenhagen.—Population, 8000. *Lund*, an episcopal city, with considerable trade, and the seat of one of the two universities of Sweden, 11 miles N.E. of Malmo. *Helsingborg*, a small town on the Sound, opposite Helsingor in Zealand, with a fine artificial harbour. *Christianstadt*, 54 miles E. of Helsingborg, is one of the best built towns in the kingdom, and is strongly fortified. It has a long bridge across the Helga river. *Vanas*, *Vanes*, or *Wanas*, 136 miles W.S.W. of Stockholm, upon an island or promontory on the west side of the Wetter Lake, at the entrance of the Gotha Canal, is a strong fortress, commenced in 1819; it was intended to be made impregnable, and to serve as a rallying point for the defence of the kingdom, in case of invasion by a foreign enemy. *Wisby*, on the west side of the island of Gottland, and the capital of the island, is the most remarkable place in the north of Europe. It is a city of the middle ages, existing almost unchanged to the present day, yet so fallen in importance, that though the space within its walls is capacious enough for 30,000 or 40,000 inhabitants, it yet contains only 4268, who are badly lodged in little tenements built under edifices of great cost and magnificence. During the tenth and eleventh centuries Wisby was one of the most commercial cities in Europe; and still contains the remains of 12 churches erected at that time. The harbour is not capable of containing more than a dozen of square-rigged vessels, and with only 9 feet of water, or 11, with particular winds *(Laing;)* but at *Slitoharn*, on the west side of the island, and *Capelshamn*, on the east, there are harbours with depth of water, it is said, for ships of war, or steam war-vessels.

3. *Norrland.* — *Hernosand*, an episcopal city, has a harbour, with considerable trade, a gymnasium or college, a botanic garden, and a printing-press, from which most of the works for the use of the Laplanders have been produced. — Population under 2000. *Lulea*, a small town, with a harbour and some trade, near the head of the Gulf of Bothnia. *Umea*, a thriving seaport town, with 1100 inhabitants, 470 miles N. of Stockholm. *Huddiksval*, a very neat little town with 2000 inhabitants, principally engaged in the stromming fishery, in the government of Gefle. The trade of ship-building has started up in all these little towns within a few years; the vessels are built entirely of fir, but are cheap, if not durable, and are purchased by Lubeck, Bremen, or Hamburg merchants. They are all increasing in extent and population.

NORWAY.

PEOPLE. — The Norwegians are a branch of the same family as the Danes, and speak a dialect of the same language. They are, however, generally a smaller race than the Swedes and Danes, but possess much spirit and fire in their manner.

They are lively, frank, undaunted, but not insolent. They are as much addicted to intoxication as the neighbouring nations; they all drink freely of corn or potatoe brandy, which is the indispensable beverage of both young and old. The total number of inhabitants, on 29th November 1835, was 1,194,827. In 1825 it was 1,051,318; the increase therefore during ten years was 13.6 per cent., or about 1½ per cent. annually. The total population, in 1835, consisted of 585,381 males, and 609,446 females; the ratio of the two sexes being as 100 to 104. The rural population amounted to 1,065,825, of whom 523,922 were males, and 541,903 females, being in the proportion of 100 to 103. The population of the towns was 129,002, of whom 61,459 were males, and 67,543 females, their relative proportion being 100 to 109. In 1825 the rural population was 935,855, and the population of towns 115,463; consequently the increase of the former, during ten years, was 14 per cent., and of the latter only 11 per cent.

RELIGION.—The Lutheran is the established religion, and to this the whole people conform. The clerical establishment consists of five bishops, those of Christiania, Christiansand, Bergen, Trondheim, and Norrland, or Alstahoug; 49 deans, and about 417 pastors of churches and chapels. The country is divided into 336 *prestgilds* or parishes, many of which are of large extent, and require four or five churches or chapels. The incomes of the bishops are reckoned about £850, and those of the rural clergy, from £170 to £340 each, derived from an assessment of grain in lieu of tythe, Easter and Christmas offerings, and dues for marriages, baptisms, and funerals. The patronage is vested in the five bishops and the Council of State, a committee of which has charge of all the affairs of the church. But, as in Sweden, religious feeling is rather at a low ebb; and in the wilder districts the church forms a sort of market-cross, where the people meet to transact their secular business.

EDUCATION. — Education is pretty generally diffused; but the standard of excellence is rather low, reading and writing constituting nearly the whole. There are parochial schoolmasters, of whom some have fixed residences, and others live for half the year in one place, and for the other half in another place. A small tax is levied from householders, and every adult pays a small personal fee. But the schools are too widely scattered to be generally beneficial. The higher department of university education, at Christiania, is very expensive; and, besides, there is not such a demand for educated men in the medical, legal, and commercial professions as in more densely peopled and more commercial countries; and the supply is adjusted to the demand. The restrictions on the free exercise of trade and industry also operate with great force in depressing general education. Before a person can enter upon any medical or legal employment, before he can manufacture, buy or sell as a merchant, he must obtain the privilege from a corporate body. As the expense of preparation, and the small number of prizes to be obtained, place the higher and the learned professions out of the reach of the great body of the people, as objects of rational ambition, for which they might endeavour to bestow a superior education on their children, so the restrictions and monopoly system shut them out from various paths and employments for which ingenuity, with ordinary useful education, might qualify them.—(*Laing's Norway.*)

GOVERNMENT. — The executive power is vested in the King of Sweden, and is exercised by a viceroy or governor-general, and a council of State; but the legislative power resides solely in the Stor-thing (*i. e.* Great Court) or Parliament, composed of members chosen by electors who are nominated for the purpose by the inhabitants of districts. The representatives must be at least thirty years of age, have resided ten years in the country, must possess property, or a liferent worth 150 dollars a-year, or belong to the class of government officers, which includes professors and clergy. Every man twenty-five years of age, and possessed of property worth 150 dollars, or holding the liferent of a property worth that sum, is entitled to vote in the choosing of the electors. Along with the sitting member a substitute is elected, who takes his place in case of death, sickness, or necessary absence. The ordinary meetings of the Stor-thing take place every third year, and nominally last three months, but may be prolonged by adjournments. The king has the power of calling extraordinary meetings, and the Stor-thing may adjourn from time to time, to resume consideration of any important matter which may not have been disposed of at the great meeting. The power of the Stor-thing is unlimited; no tax or law of any kind can be passed or imposed without its sanction; and though the royal assent is required before a law can be enforced, yet any bill which has been voted by three successive Stor-things becomes law without it. Appointments to public offices are nominally vested in the King, but are not final till confirmed by the

Stor-thing. The King neither presides nor is represented at its meetings; there is not even a crown-officer to propose bills, or give any explanation of ministerial measures; but, when any proposition is to be made by Government, a royal councillor is admitted, who reads the project, and then withdraws. At its meetings the Stor-thing divides itself into two chambers. One-fourth of its whole number is formed into a sort of committee, called the *lag-thing*, while the remainder form the *odels-thing*. The Stor-thing consists in fact of three houses, — the lag-thing, the odels-thing, and both of these united in one house. All motions are made and discussed in the whole house; and, if entertained, are referred to committees, to report. The report is debated and voted upon; and, if approved, a bill in terms of it is ordered to be brought into the odels-thing, from which it passes to the lag-thing, to be there deliberated upon, rejected, or amended. The members are paid for their services. Hereditary nobility was abolished by the Stor-thing in 1821 against the King's will.

Norway was under the absolute government of the King of Denmark, from an early period till 1814, when the Danish monarch, being compelled to cede this portion of his dominions to Sweden, issued a proclamation releasing his Norwegian subjects from their allegiance. Upon this the Norwegians declared themselves independent, formed a constitution which was proclaimed on the 17th of May 1814, and called the Prince Christian of Denmark to the throne: but the Crown Prince of Sweden having advanced into Norway with an army, the new King resigned his crown in October following, and the Stor-thing entered into an arrangement with Bernadotte, to confer the crown upon him, on condition of his maintaining the constitution which they had established. He accepted the terms on the 4th of November, and took the oath of fidelity to the constitution; but he, nevertheless, professes to consider his title to the kingdom as derived from the King of Denmark's cession, and the new constitution to be a grant from himself on the 4th of November; while, on the contrary, the Norwegians maintain, that their constitution exists as established by themselves on the 17th of May, and that the King's title to their crown is derived from the compact of the 4th of November. In this paltry spirit the King has kept up a dispute with the Norwegians for many years; the latter persisting in celebrating the 17th of May as the anniversary of the constitution, while the former interferes by every means in his power to prevent them. The constitution has proved in practice much too democratical for the lovers of monarchical government, and the history of the Stor-thing, for several years, has been a series of disputes with the executive government; of the earnest and repeated attempts of the one party to grasp a greater authority than they now possess, and of the other in steadily and resolutely resisting them. There is little indeed in the history of Europe, for the last twenty years, more interesting and encouraging than the history of Norway from the establishment of her democratical constitution.

For legal purposes, the kingdom is divided into four *stifts* or provinces, which are subdivided into sixty-four districts. For each of these divisions there is a separate tribunal, with a supreme court of appeal at Christiania, named the Hoieste-ret-court, which is one of the three estates of the constitution, being independent of both the executive and the legislative branches. This court consists of seven judges.

Revenues. — The revenue is in so flourishing a condition that the government has paid off the whole of that portion of the public debt of Denmark which was laid upon Norway, at the separation of the two countries, in 1814; while, on the contrary, the Danish portion has gone on continually increasing. The Norwegian revenue has increased with its population and industry. From 1816 to 1825, the average sum produced by the customs was about £215,000 sterling. In the ten following years, notwithstanding a reduction in the rate of duties, the average receipts were about £277,850; and in 1835, the receipts were about £350,332. The expense for the public debt, the army and navy, the administration, public instruction, &c. did not exceed, during these last ten years, £450,416 per annum; and as the customs sufficed for two-thirds of this expenditure, the direct taxes were consequently very light.

Army and Navy. — The Norwegian army consists of about 12,000 troops of all arms, besides 30,000 enrolled militia. The army is at the disposal of the King in so far as its services can be rendered available in Scandinavia; it cannot, however, be sent abroad without leave of the Stor-thing. The military navy consisted, in 1839, of 1 frigate, 1 sloop, 2 brigs, 8 schooners, 88 gun-boats and galleys.

Productive Industry. — 1. *Agriculture.* There are two classes of landholders in Norway; those who have farms larger than themselves can cultivate, and those who

farm the whole of their own estates. The former are termed proprietors; their incomes seldom exceed 800 or 900 dollars; but there are a few with incomes of £3000 or £4000 sterling a-year. The latter class are called *bonder*. The valleys are crowded with bonder farms, which, in apparent plenty and completeness, may compete with with the richest and finest in Scotland. The farmers are owners of their small estates, which produce all the necessaries of life, and afford a surplus for the payment of taxes, and the purchase of luxuries. There is still a third class, called the *Fjelde bonder*, who also possess land, and have houses; but, being above the level of the corn-growing country, their condition is not so comfortable as that of the low country bonder. They possess, however, property in cattle as well as in land, and are extremely hardy and active. The principal agricultural produce consists of oats, rye, wheat, bear, hops, flax, a kind of bearded spring grain, and potatoes; but the country is incapable of furnishing the means of subsistence to any considerable population; and though agriculture is not neglected, the produce of the crops is not sufficient for home consumption. Generally speaking, only the valleys are inhabited; on the dividing ridges there is little or no cultivation, and indeed no soil to cultivate, but only rounded masses of gneiss, and micaceous rocks, with juniper, fir, aspen, birch, and beech trees which grow wherever there is soil to support them.

2. *Fisheries.* — In Nordland and Finmark agriculture is but a secondary concern, and fishing may be said to occupy chiefly the attention of the inhabitants. The winter fishery in the Lofoden islands, from the middle of February to the middle of April, and the summer fishery along the coasts furnish the people with the means of purchasing the necessaries which they require. The fish trade is the subject of a very curious monopoly. It does not belong to Norway as a whole, but is in the possession of Bergen, Trondheim, Christiansand, and one or two other places of smaller note. Those who manage the business are licensed burgesses of these towns, and each possesses a certain extent of coast, or circle of country, within which no other person is entitled to buy or sell. These privileged traders pay a certain amount of tax, and are obliged to receive and entertain travellers; and their exclusive privilege has become hereditary, attached to the house or factory in which it may be exercised by a licensed trader. The average value of the winter fishery is about £86,500 sterling; the merchants send vessels furnished with the articles required in the country, and receive in payment the produce of the eight weeks' fishery. During the remaining ten months of the year, the trade of these northern provinces is left entirely in the hands of the Russians, who feed the population, and receive in return all that their industry produces in the fishery. The herring-fishery is so judiciously managed, that the Norwegians have beaten the Scottish curers out of the markets of the Baltic, as they deliver fish better assorted and of superior quality. Besides these important general fisheries, there is in every creek of the fiords, even at a hundred miles up from the ocean, abundance of cod, whiting, haddocks, flounders, seabream, and herring, caught for daily use, and for sale by the seafaring peasantry. On the rocky shores of Christiansand lobsters are found in greater numbers than in any other part of the world; and from Bergen so many as 260,000 pairs have been exported in a year. The rivers and lakes are likewise well supplied with fish, which may indeed be said to constitute the basis of a Norwegian repast.

3. *Mines.* — The mountains, especially those of the south, contain a great number of minerals sought after for collections, and of valuable metals, among which may be mentioned gold, silver, iron, copper, cobalt, and others. The principal silver mine is at Kongsberg, the annual profits of which are stated to be £22,000 sterling. *(Bremner.)* There is a gold mine at Edswold, in the district of Rommarge, and mines of lead and silver in that of Jarlsberg; but they have not been wrought to any extent. The copper mines are chiefly situate in the northern part of the kingdom. The most considerable are those of Roraas, which were discovered, in 1644, at the base of the Dovre-field. The other copper mines are from 45 to 60 miles from Trondheim. The principal iron mines are in Southern Norway, at Arendal, Kragcroe, Laurvig, Moss, and other places; the whole produce of which has been estimated at 14,735 tons annually. The mines of cobalt, worked at Modum and Fossum, are extensive, but not deep. There is a mine of plumbago at Engledal. The alum mines, wrought in the Egeberg, near Christiania, afford a sufficient supply both for home consumption and for exportation. There are also in different places quarries of granite, marble, millstone, whetstone, slate, and clay.

4. *Manufactures.* —The great bulk of the population are employed in farming, preparing timber for the market, fishing, or navigation. A few men are employed in the

mines; but of manufacturers on a great scale, there are none in the country. In the rural districts every family manufactures its own cloth and linen, and furnishes its own sempstress, tanner, shoemaker, and blacksmith. Every person can work in wood; domestic implements, and ornaments and furniture are all made by the peasants themselves.

5. *Commerce.* — Wood and fish are almost the only exportable produce of the country, and find their way to every part of Europe, chiefly in Norwegian vessels, which, in return, bring home whatever foreign articles are required, at the cheapest rate of freight. The principal articles of export are timber, bark, iron, copper, and fish; of import, corn, colonial produce, woollen, linen, and cotton goods, wine, brandy, &c. The inland trade between Norway and Sweden is also considerable. The principal commercial towns are Bergen, Drammen, Christiania, Langesund, Christiansand, Trondheim, Frederikstadt, Arendal, Oster-Rusoer, Laurvig, Tonsberg, and Hammerfest. The national bank is established at Trondheim: its notes form the principal part of the money currency in the country; and even on the Exchange of Hamburg, are valued so high as at the rate of 111 dollars paper for 100 specie.

INLAND COMMUNICATION. — The roads which connect the principal towns are good, and travelling along them is accomplished in the same way as in Sweden, by the peasants being obliged to send their horses to the post-stations in rotation. The country contains no railroads or canals.

ADMINISTRATIVE DIVISIONS. — Norway is divided into 17 *amts* or districts, which may be arranged according to the three geographical regions within which they are situate, viz. *Sondenfjelds*, *Nordenfjelds* and *Nordlandens*, as stated in the following table:—

Districts.	*Cities and Towns.*
SONDENFJELDS.	
Aggerhuus, ...	Christiania, Drobak.
Smaalehnene, ...	Moss, Frederikshald, Frederikstad.
Hedemarken, ...	Hof, Kongsvinger, Elverum.
Christian, ...	Biri, Lessoe.
Buskered, ...	Drammen, Eger, Modum, Kongsberg.
Bratsberg, ...	Skien, Porsgrund, Krageroe, Langesund, Brevig.
Nedenaes and Raabygdelaget,	Arendal, Grimstad, Rüsoer.
Lister and Mandal, . .	Christiansand, Mandal, Farsund, Flekkefjord.
Stavanger, ...	Stavanger, Egersund.
Jarlsberg and Laurvig, .	Tonsberg, Holmstrand, Laurvig, Sandefjord, Frederiksvörn, Valloe.
NORDENFJELDS.	
Söndre-Bergenhuus, .	Bergen, Rosendal.
Nordre-Bergenhuus, . .	Leganger, Vlig, Indvig.
Romsdal, ...	Christiansund, Molde.
Söndre-Trondheim, . .	Trondheim (Drontheim), Roraas.
Nordre-Trondheim, .	Levanger, Stordalen, Skogn.
NORDLANDENS.	
Nordland, ...	Bodoe, Alstahang or Alstahong.
Finmark, ...	Tromsoe, Altengaard, Hammerfest, Wardoehuus or Vardoe, Vadsoe.

§ *Cities and Towns.*

CHRISTIANIA, the capital, stands at the head of a long fiord, on a low slope surrounded with beautiful heights, in north latitude 59° 55′, and east longitude 10° 48′. It is a dull town of plain houses, and without any other ornamental buildings than the royal palace, recently erected at the cost of £300,000, but still unfinished and unoccupied. The quarter, however, inhabited by the higher classes is laid out regularly with spacious and even handsome streets. The houses are of brick. Christiania is the seat of the government departments, of the higher courts of law, of the university, and other seminaries of high character; the principal of which is the military academy or cadet institution, which possesses an excellent library, a collection of models of mines, bridges, &c., and of all sorts of minerals. It contains 40 pupils, divided into four classes, who enter the army after having studied for five years, and passed a very rigid examination. Christiania possesses a considerable foreign trade, and contains a greater proportion of the educated and refined classes, and of people of literary tastes, than any town in Britain of equal extent.—Population, 24,000. *Frederikshald*, 60 miles S.S.E. of Christiania, is a town of 5000 inhabitants, spreading irregularly round the foot of a lofty rock, on the top of which is the fortress of *Frederikstein*, 400 feet above the level of the sea, and still very strong. A small obelisk marks the spot where Charles XII. was killed in 1718. *Drammen*, 24 miles S.W. by W. of Christiania, a large straggling town, with 7250 inhabitants, exports more timber than any other town in Norway. *Kongsberg*, 20 miles W. by S. of Drammen, a very poor though substantially built town with 3000 inhabitants. About 3½ miles from the town, in a sequestered part of the mountains, is the celebrated silver mine. It consists first of a horizontal tunnel into the side of a hill 5850 feet long, the shaft then descends perpendicularly 1350 feet, to a point 3850 feet below the summit of the superincumbent mountain. The silver is found in a slender vein which the miners hunt and follow with the shaft wherever it wanders, and the mine is so narrow that only two can work at once. The mine is public property, and the profits are stated to be about £22,000 sterling.—*(Bremner.)* Three miles below Kongsberg, the Louven-elf forms a series of tremendous falls, called the *Laabron-fos*; and 40 miles W. by N. of Kongsberg, the Maan river has a fall of 450 feet, called the *Rinkan-fos*. *Modum*, 27 miles W. of Christiania, is noted for its rich mine of cobalt. *Arendal*, *Laurvig*, *Rüsoer*, *Grimstad*, and *Tonsberg*, are all seaport towns on the coast S.W. of the capital, and possess a number of vessels, which carry on a considerable trade. *Frederiksvörn*, the naval arsenal

of Norway, is a strongly fortified town, 68 miles S.S.W. of Christiania. *Christiansand*, 37 miles E.N.E. of the Naze, is a considerable trading town, with a fine fortified harbour, and a quarantine station. It has also a college, a library, a museum; the population in 1835 amounted to 7765. *Mandal*, a small seaport town midway between Christianssand and the Naze, at the mouth of the Mandal river. *Stavanger*, on the North Sea, lat 59° N., is noted for its fine harbour, its antiquity, and its cathedral, considered to be the finest Gothic monument in Norway.—Population in 1835, 4857. *Frederikstad*, a fortified town, with a good harbour and considerable trade, and believed to be the only town in Norway built of stone; 50 miles S. by E. of Christiania. — Population in 1835, 2495.

Bergen is situated at the head of a deep bay on the west coast, 365 miles W.N.W. of Christiania. The town is well-built, and, when viewed from the sea, has a very picturesque appearance. It contains a cathedral and four other churches, three hospitals, a prison, a correction-house, six establishments for the poor, a national museum, five public libraries, a naval academy, a college, and various schools. It has manufactures of tobacco and porcelain, many distilleries, and some ropeyards; but the fishery is the principal business. The town is surrounded by lofty walls, and protected by several forts, a garrison of 300 men, and a squadron of the navy. The harbour is safe and commodious, with deep water; but, owing to rocks, is of difficult access. — Population in 1835, 22,620.

Trondheim (Trondyem, Drontheim), formerly the residence of the Norwegian kings, is situate on the shore of a vast fiord, in N. lat. 63° 25′. The town is built wholly of wood, and has been seven times burnt to the ground; but the houses are handsome, and tastefully ornamented. It contains a cathedral, built in room of an older one burnt in 1719, which had been for centuries a noted place of pilgrimage. It contains also a college, a royal academy of sciences, a cabinet of natural history, a good public library, a seminary for the instruction of the Lapa, and several other institutions. It is the entrepot of the copper produced by the rich mines of Roraas. — Population in 1835, 12,358. The environs are very beautiful. *Roraas*, a town in the district of Trondheim, with about 3000 inhabitants.

Christiansund, in the district of Romsdal, a small town, with a fine harbour, flourishing fisheries, and an agricultural society. — Population, 2000. *Alstahoug*, a miserable town, is only remarkable as the most northerly bishop's see in Europe (lat. 67° 38′), and as the residence of the bailie of Nordland. *Tromsoe*, capital of Finmark, a small town on an island, with considerable trade, and about 700 inhabitants. There is a newspaper published here, probably the most northerly in the world. *Hammerfest*, a small town in Finmark, upon the island Hvaloe, has only about 100 inhabitants, but carries on a considerable trade. In the five years ending with 1834, the value of its exports, consisting of fish, skins and hides, feathers, horns, walrus teeth, wool, train oil, and copper ore, was about £160,780 sterling. But within the custom-house bounds of Hammerfest, there are upwards of thirty privileged establishments, over which the officers have no control, and with which the Russians have the privilege of trading one month in each year. *Wardoehuus*, a small fortress, with a harbour, and about 100 inhabitants, in N. lat. 70° 22′. Every soldier who serves here for four years voluntarily, is exempt from military duties for the remainder of his life.

RUSSIA IN EUROPE.

ASTRONOMICAL POSITION.—Between 43° and 70° North latitude, and 18° and 65° East longitude.

DIMENSIONS.—The greatest extent, measured from the most southerly point of the Crimea to the north coast of Lapland, or the mouth of the White Sea, is 1720 miles; and from the western border of Poland to the 60th meridian, along the 52° parallel, 1791 miles. The superficial area exceeds 2,000,000 English square miles.

BOUNDARIES.—*Northern*:—The Arctic Ocean. *Southern*:—Caspian Sea, Kouma and Kouban Rivers, Black Sea, Danube. *Eastern*:—Ural mountains, Ural River, Caspian Sea. *Western*:—Norway, Sweden, Gulf of Bothnia, Baltic Sea, Prussia, Austria, Moldavia.

GENERAL ASPECT.—With the exception of Finland, Lapland, and the country to the north-west of the Gulf of Finland, the great lakes and the White Sea, the whole of this extensive territory belongs to the great plain, which extends through the middle of Europe, from the German Ocean to the Caspian Sea and the Ural mountains. It is not, however, perfectly level; for there are at least three distinct slopes down which its waters are carried to the adjoining seas. The water-shed, which is only a few hundred feet in elevation, may be traced from a spur of the Carpathians, near the source of the Dneister, through the provinces of Volhynia, Grodno, Minsk, Smolensk, Bialistock, Pskov, Tver, Novgorod (where it forms a sort of plateau, and rises into the Valdai hills, the highest point of which is only 1370 feet above the level of the Baltic Sea) and Vologda, to the Ural mountains, at the sources of the Petchora. The northern slope, which forms the basin of the White Sea, possesses a barren soil and a cold climate; its southern districts are chiefly covered with forests, only a few spots being cultivated; and towards the north it stretches out into immense plains covered with moss, marshy in summer, and frozen in winter, and interrupted here and there with a few rocky ridges. The southern slope may be divided into three regions:—Central Russia, the Steppes, and the country beyond the Volga. Central Russia and Poland, which extend from the Carpathian mountains and the western border of Poland to the banks of the Volga, with a breadth of about eleven degrees of latitude, to the south of the great water-shed, improves progressively towards the south; the southern half being a country of great fertility. Between this fertile region and the Caspian and the Black Seas extend the *Steppes*, which are usually divided by geographers into the *Higher* and the *Lower*. The former extend westward from the Don and the Manytsh, along the Sea of Azov and the Black Sea, including three-fourths of the Crimea, cross the Dnieper, and spread westward along its right bank till they meet the outskirts of the fertile regions of Little Russia. Their surface is in general not more than 200 feet above the level of the sea; and throughout the whole space there is nothing to be seen but a coarse rank grass, which feeds immense droves of horses, but is unsuitable for cattle. In the hollows, however, along the banks of the rivers, and in some other places, where care is bestowed on its cultivation, the soil is sufficiently productive; and in the Crimea, wherever vegetation is capable of being produced, the whole surface of the Steppe is covered with plants, whose gaudy blossoms fill the air with refreshing fragrance. The Lower Steppes extend along the northern and western shores of the Caspian Sea, from the river Ural to the bottom of the Caucasus, with a breadth of from 250 to 300 miles. The soil in the maritime parts is covered with a fine sand mixed with shells, and produces no trees or shrubs, but only at certain seasons a scanty grass. The soil is everywhere strongly impregnated with salt, and the lakes which occur in it yield a quantity of that article in summer sufficient to supply the greater part of Russia. The country to the east of the Volga is hilly, and even mountainous, being traversed by the spurs of the Urals. It is of moderate fertility in the valleys; but the hills and the lower parts of the mountains are covered with forests. The third slope, which declines to the Baltic, extends from the borders of Prussia to the Gulf of Finland, and the Lakes of Ladoga and Onega, and is in general a country of moderate fertility, interspersed with a number of lakes, and containing some sandy tracts, intermixed with portions of rich soil. The country

to the north-west of the great lakes, the White Sea, and the Gulf of Finland, including Finland and Lappmark, is, in the northern and western parts, covered with mountains, the main range of which extends southwards, parallel with the Gulf of Bothnia, till it gradually disappears in the neighbourhood of Biorneberg. The centre of Finland is an elevated plateau, from 400 to 600 feet above the level of the sea, full of lakes, and covered with low rocky heights, composed chiefly of red granite. Lappmark is exceedingly barren; but the valleys among the mountains, in the southern parts of Finland, contain rich meadows and good arable land. Both the western and the southern coasts of Finland are lined with precipices, reefs, and rocky islands; and in some parts of the lowlands the surface is overspread with enormous blocks of granite.

GULFS, BAYS, AND STRAITS.—The *Bieloe Moré*, or *White Sea*, is a large gulf of the Arctic Ocean, about 200 miles in length, but varying in breadth, the narrowest part being 45 miles across. It occupies an area of 40,000 square miles, and is mostly covered with ice during four or five months of the year. Its north-western portion is named the *Gulf of Kandalax*; and on its south-west side are the *Bays of Onega* and *Arkhangel*. The *Tcheskaia Gulf* is another inlet of the Arctic Ocean, separated from the White Sea by the Shemo Rhonskian peninsula. The *Strait of Waigatch*, still further east, is formed by the mainland of Arkhangel, and the island of Waigatz. The *Gulfs of Finland, Bothnia*, and *Riga*, are large inlets of the Baltic Sea, and form together nearly the whole of the western maritime border of Russia. The *Black Sea*, (*Tcheriago Moré* or *Chernoe Moré*), *Sea of Azov*, *Kimmerian*, *Bosphorus* or *Strait of Yenikaleh*, or *Kaffa*, all in Southern Russia. The Sea of Azov (Azow) is an arm or branch of the Black Sea, with which it communicates by the Strait of Yenikaleh. Its greatest length from S.W. to N.E. is about 210 miles, and its greatest breadth about 110. It is generally shallow and encumbered with sand-banks; its greatest depth is only about 7 fathoms. The north-eastern portion is so shallow, even where deepest, that it cannot be navigated by vessels drawing more than 12 feet water; and during the prevalence of easterly winds the bottom is uncovered to a considerable extent. Its water is little more than brackish; it abounds with fish; and the fisheries are important and valuable. The trade mostly centres at Taganrog; but the sea is generally frozen over from November till February or March. Along the western shore it is marshy, and is there separated by a narrow tongue of sand 70 miles in length, from a stagnant gulf named the *Putrid Sea* (*Sivaché Moré* and *Guiloe Moré*), which nearly divides the peninsula of Crimea from the mainland of Taurida.

CAPES.—*Sviatoi Noss*, at the eastern side of the Tcheskaia Gulf; *Kanin Noss* at the eastern side, and *Sviatoi Noss*, at the western side of the entrance of the White Sea. *Domesness*, at the south-western entrance of the Gulf of Riga. It has a double lighthouse, but is nevertheless dangerous to shipping. *Aia Burun*, called also *Kriou Metopon*, or the *Ram's Head*, is the most southerly point of the Crimea in the Black Sea; and consists of very high cliffs.

ISLANDS.—1. In the Arctic Ocean:—*Novaia Zemlia*, or the *Newland*, consists of at least two large islands, which extend from the Strait of Kara towards the north-north-east, for about 400 miles, with a breadth of only 50. They are divided near the middle by a strait named the Matotshkin Skar, and consist of an exceedingly sterile region, traversed through their whole length by a range of mountains. The eastern coast of the northern island is so completely obstructed with ice, that no navigator has yet been able to explore it; the climate is too rigorous to admit of the country being inhabited; and the only vegetation consists of lichens and mosses. *Waigatz*, a small island between Novaia Zemlia and the continent. *Kolgouev*, another small island to the north of the Tcheskaia Gulf, covered with marshes, moss, and brushwood. *Solovetskoi* (*Nightingale*) *Islands*, a granitic group in the southern part of the White Sea.

2. In the Baltic Sea:—*Oesel*, *Dago*, *Wormo*, *Moen*, *Runa*, and others, separate the Gulf of Riga from the Baltic. *Oesel*, called by the Esthonians *Kurrisaar* (Crane Island), is about 50 miles in length, by 30 in breadth; its surface is diversified by forests, lakes, and rivulets; the inhabitants are industrious though rude, and *Arensburg*, its capital, contains a population of 1400. *Dago*, lies to the north of Oesel, and abounds in wood; the western part is sandy, but not unfertile; rich meadows, orchards, and gardens occupy the eastern part. The other smaller islands of the group have nearly the same character. The Esthonians give to them the general name of *Sarri-ma*, or the island country. Their climate is milder than that of the continent; the autumns are more genial, the oak thrives, and the sheep have a finer wool. *Aland* is the name of a large group of rocky islands at the entrance of the Gulf of Bothnia. So many as 80 of them are said to be inhabited, and the largest contains a population of 14,000. The Russian government has been engaged for many years in fortifying these islands, so as to make them an impregnable naval station; and constantly maintain upon them a very large garrison. The sea between the Aland islands and the coasts of Sweden and Finland, is frequently passable upon the ice in winter; but, generally speaking, the climate is not cold, and good crops of barley are produced. The inhabitants are largely engaged in the fisheries, and export great quantities of fish, and of the eggs and feathers of the sea-fowl, which breed among the islands. *Rotline*, an island of sand, near the eastern extremity of the Gulf of Finland, containing the fortress, naval arsenal, and port of Cronstadt.—(*See Cities and Towns.*)

3. In the Black Sea:—*Taman*, between the Sea of Azov and the Black Sea, formed by the two branches of the river Kouban, on the eastern side of the Strait of Yenikaleh. *Zmievoi*, called by the Turks *Oulan-Adassi*, or *Serpent's Isle*, 24 miles off the mouth of the Danube, is about a mile and a half long, and principally composed of barren cliffs, with little or no vegetation, which form a secure retreat for vast numbers of sea-birds. The Greeks, Russians, and Turks believe it to be infested with serpents of enormous size, which keep guard over boundless treasures, and devour every human being who has the rashness to land upon it. The ancient Greeks called it *Leuké* (*i. e.* White Island), and believed it to be the abode of the hero Achilles, in his deified state.

RIVERS.—1. THOSE WHICH FLOW TO THE ARCTIC OCEAN.

The *Paswig*, which is the outlet of Lake Enara, and forms in part the boundary between Russian Lapland and Norway. The *Kola*, also in Lapland. The *Petchora*, a large river, which has its source in the Ural mountains in the Government of Perm, and flows through a desolate region into a gulf of the Arctic Ocean. The *Onega*, the *Dvina*, and the *Mezen*, flow into the White Sea. The Dvina is a large and important river, and forms at its mouth the harbour of Arkhangel. It is formed by the union of the *Soukhona* and the *Iog*; and its principal affluents are the *Vitchegda* and *Keltma*, and the *Pinega*, on the right; the *Baga* on the left.

2. THOSE WHICH FLOW TO THE BALTIC SEA.

The *Tornea* and *Muonio*, which form the boundary between Russia and Sweden, at the head of the Gulf of Bothnia. The *Kemi*, *Ulea*, *Pyhajoki*, and *Kumo*, flow into the eastern side of the same gulf.

The *Kymen* or *Kummene*, flows into the Gulf of Finland. The *Neva*, a large river, forms the outlet of Lake Ladoga, and enters the Gulf of Finland at St. Petersburg. Its length from the lake to the sea is 46 miles, its mean breadth about 1500 feet, and its depth, in many places considerable; in the channel it is generally about fifty feet. It is frozen over for five months in the year. The principal feeders of the lake are the *Swir*, which is the outlet of Lake Onega, the *Volkhov*, which is the outlet of the Lake Ilmen, and the *Waza* or *Wuoxa*, which is the outlet of the Lake *Saima*; so that the *Neva* is the only outlet of all these great masses of water. The *Narva* or *Narova*, flows from Lake Peipous into the Gulf of Finland, below the town of Narva. The *Duna* (*Drugowa* of the Lettons, and *Southern Dvina* of some geographers) rises from a marsh in the Government of Tver, not far from the source of the Volga, and flows into the Gulf of Livonia below Riga. It is navigable up to Velige, in the eastern part of the Government of Vitepsk; its principal affluents are, the *Drissa* and the *Pedetz* on the right; the *Meia*, *Ula*, and *Dima*, on the left. The *Niemen* rises in the Government of Minsk, and flows into the Curische Haf, below Memel. Its principal Russian affluent is the *Wilia*, which passes Wilna. The *Vistula* flows through Russian Poland, where it receives the waters of the *Wieprz*, *Bug*, and *Narew*, on the left; the *Pilica*, and *Bzura*, on the right.

3. THOSE WHICH FLOW TO THE BLACK SEA.

The DON OR TANAI (ancient *Tanais*) has its source in the small lake Ivanof, in the Government of Tula, and flows into the Sea of AZOV, after a course of 900 miles. It is generally so sluggish and full of shallows that it is nowhere navigable for large vessels. Its bed, however, contains neither rocks nor large stones, but is formed of sand, marl, and chalk. From the middle of April to the end of June, small vessels ascend to Zadonsk; but at other times there are not more than two feet of water on the sandbanks, and its mouths are so completely choked with sand and mud, that only flat boats can be used upon it. Above Voronej its course lies among fertile hills; from that place, till it pass the chain of the Volga, its left bank is so flat that the adjoining country is often formed into unhealthy swamps, but its right bank is lofty. Its waters are so strongly impregnated with chalk and mud, as to be dangerous to those unaccustomed to drink them, but they nevertheless abound with all the kinds of fish usually found in the Russian rivers. Sandbanks and small islands are of frequent occurrence, but there is not a whirlpool, nor a waterfall in its whole course. Its principal affluents are the *Soma* and *Donez* or *Donetz*, on the right; the *Voroneje*, *Khoper*, *Medviaditsa*, and *Manyteh*, on the left.

The DNIEPER rises from marshes among the Alaunian hills, in the Government of Smolensk, and after a course of 1000 miles, discharges itself into a gulf of the Black Sea, 50 miles in length, and from 1 to 5 or 6 miles in width. It is navigable from Smolensk to Kief, where it is crossed by a bridge 3583 feet, or 1638 paces long; but, further down, its bed is so full of rocks and cataracts, that from Krementchchug to Alexandrofsky, a distance of 150 miles, there is no navigation. At the latter place it becomes again navigable, and so continues to the sea. It abounds with sturgeon, shad, pike, and carp. In the upper part of its course it is frozen from November to April, and at Kief, from December to March. Its principal affluents are, the *Berezina*, *Priepecz*, the *Teterov*, and the *Bog* or *Big*, on the right; the *Desna*, *Seim*, *Sula*, *Peol*, *Worskla*, *Uriel*, on the left. The Priepecz flows through the middle of an extensive swamp, which covers an area of upwards of 2000 square miles, and is connected with an immense swampy tract, which extends northwards between the sources of the Niemen, the Berezina, and the Villa, and terminates at the Duna, to the southward of Dunaburg and Polotsk. The Bûg is a rapid river with a deep bed, abounds in fish, and flows into the gulf of the Dnieper, and not into the river itself.

The DNIESTER issues from a small lake on the north-eastern flank of the Carpathian mountains, in Galicia, and flows in a south-easterly direction into the Black Sea at Akerman. It is navigable, and forms a good outlet for the raw produce of the country on its banks.

The PRÛTH also rises on the north-eastern flank of the Carpathians, and flows southward into the Danube, below Galacz, after having formed, throughout the greater part of its course, the boundary between Moldavia and Bessarabia.

The KOUBAN rises from the northern side of the Caucasus, in the country of the Circassians, and, near its mouth, divides into two branches, one of which flows into the sea of Azov, and the other into the Black Sea.

4. THOSE WHICH FLOW TO THE CASPIAN SEA.

The WOLGA (VOLGA), the largest river in Europe, has its source in a small lake, in the forest of Volkhonsky, in the government of Tver, about 560 feet above the level of the Caspian Sea. At Rief, where it first becomes navigable, it is only 90 feet wide; thence it flows constantly to the east, though with considerable windings, to Kasan, where its width is 600 feet. From Kasan, not far below which it receives the *Kama*, a large river from the north-east, it flows in a south-westerly direction till it approaches within forty miles of the Don, from which it is separated by a lofty but barren tongue of land; and at Sarepta it turns to the south-east, and continues in that direction to the Caspian Sea, which it enters by 65 or 70 mouths. The length of its course is above 2000 miles. It flows in many places among beautiful hills, but contains no falls. It has always a considerable depth, which varies from seven to eighteen feet, and in some places attains a great width. At Nishnei-Novgorod, where it is joined by the Oka, it is 4600 feet wide; but farther down, the steep banks confine it to the breadth of two-thirds of a mile. At Kasan, however, it is only 600 feet wide, and at Saratov, 1200; but at Astrakhan, when in flood, its width is nearly five leagues, and when the snow is melting, its vast stream flows among a multitude of islands linked together by forests. The Wolga is the great highway of Central Russia; about 5000 loaded boats annually descend the stream; it is said to supply more than half of the fish consumed in the empire; and the fisheries have been calculated to yield a clear annual profit of £230,000 sterling. During a great part of the winter the river is frozen over; but in the south, there are always many openings, named the Lungs of the Wolga, through which the air escapes. Its name is said to mean *Great*; its Tartar name, *Idel*, *Edel*, or *Adel*, signifies abundance; the ancient Greeks called it *Rha*, and sometimes *Araxes*; and the Merdouins, at the present day, call it *Rhavu*. Its principal affluents on the right are:—the *Oka*, with its affluents *Upa*, *Zna*, *Moskva*, and *Kliasma*; and the *Sura*, with its affluent the *Alatyr*. Its affluents on the left are:—the *Tvertza*; the *Mologa*; the *Checksna*, the outlet of the Biele-Ozero; the *Kama*, with its affluents the *Viatka*, *Silva*, *Bielaia*, and *Ufa*; the *Samara*, and the *Sarpa*.

The *Ural* or *Iaik* river rises from the eastern flank of the Ural mountains, and flows into the northern side of the Caspian Sea. It is a large river, flowing in a smooth channel, sufficiently deep for small vessels, abounds in fish, and throughout the greater part of its course, forms the reputed boundary between Europe and Asia.

LAKES.—Russia abounds with lakes, but our space will permit us only to name the principal ones. The *Ladoga*, the largest in Europe, and the *Onega*, the second (see p. 141), and the *Saima*, with many others, are situate between the Gulf of Finland and the White Sea. The Ladoga is bordered on the north by calcareous rocks, which contain quarries of fine marble; but in other places its banks are low and sandy. The bottom consists chiefly of gravel; the water is clear, and abounds with fish. It is covered annually with a thick crust of ice, and it is then that the fishermen are most successful. There are more inequalities on the banks of the Onega, but in other respects its character is the same. The streams of its feeders fall in cataracts, or wind slowly through heaths and

barren lands. The other principal lakes are the *Bielse Ozero* (White Lake), and the *Ilmen*, in the government of Novgorod; the *Peipous* or *Tchoudé* see p. 141, between St. Petersburg and Livonia; *Kubinsk*, in Vologda; the *Belchei-ilmen*, formed by the Manytsh, an affluent of the Don; the *Enara*, in Lapland. These and other lakes are the recipients and feeders of large rivers, which originate in marshy uplands, where the waters derived from the melting snow accumulate into vast reservoirs. The government of Olonetz alone is said to contain about 2000 lakes; Finland is nearly as well supplied; and the government of Astrakhan abounds with salt lakes and marshes.

CLIMATE. — The climate of Russia is of an extreme character; the winters being colder, and the summers warmer, than in the corresponding latitudes of western Europe. In the south, however, the spring is early and mild; the summer is of long duration, with oppressive heat and little rain; autumn follows late in the year, and the winter is short, with little snow, though sometimes the cold is severe. In the heat of summer, a dangerous disease, named *jassia*, is generated, which is fatal to the lower animals as well as to man. Violent whirlwinds are frequent; and a north-easterly wind prevails, called *mitel*, often accompanied by snow, which is drifted with great violence, and much dreaded. The middle region, extending from 50° to 57°, has a rough and long continued winter, especially towards the east; and at Moscow, Lat. 56°, the mean temperature of the year is only 40° of Fahrenheit, while that of the hottest month rises to 70½°. In the more northerly region, from 57° to 67°, the climate is much milder than in the same parallels in Asia, but is severer than in western Europe. The winter here is long and severe, extending to six or seven months, during which travelling is practicable only on sledges over the frozen snow. The autumn is foggy, and, in winter, mercury freezes. The duration of winter at St. Petersburg extends from the end of September to the beginning of May; snow and ice set in about the 9th of October, and continue till May, when winter disappears all at once. On an average, 230 days of the year are reckoned to belong to winter; and for 160 of these the waters are fast bound with ice. In the arctic region, extending from 67° to 74°, the climate is very rigorous in winter, and warm in summer, there being in fact little more variety than one long winter night and one long summer day. The summer, however, is much overcast with vapours, which obscure, and sometimes hide the sun; while, on the contrary, the long night is greatly relieved by clear moonlight and the brilliant corruscations of the aurora.

GEOLOGY AND MINERAL PRODUCTIONS. — The predominating formations are the tertiary and alluvial; the older formations being less unfrequent. The primitive, however, and the transition rocks, occur in the Urals, Finland, Lapland, in some parts of Carelia, Olonetz, Crimea, Caucasus, the Valdai plateau, Sandomir, Revel, the country round lake Ilmen, and Vologda, and the tract extending eastward from Brody across the Dnieper. The secondary rocks frequently appear rising like small islands, in the great plains; and among the formations of this class are found coal, lime, gypsum, chalk, and salt. The tertiary formations occupy vast tracts of the low country, and include clay, loam, limestone, brown coal, gypsum, and in many places rich deposits of rock salt. Throughout Poland, Podolia, and southern Russia, there is a tertiary limestone extensively deposited, which is almost peculiar to the country. It is covered with a marly clay and sand, and contains numerous fossil remains of unknown animals. In central Poland is a clay with lignite or brown coal, resting upon chalk. The alluvial formations consist of an old and a new deposit, the former composed of a great stratum of marly clay or loam, interspersed with numerous blocks of granite and other primitive rocks. It covers vast tracts of country in Poland. The soil which it forms in the south of Poland is excellent, but towards the north it becomes gradually less productive, and more mixed with sand, gravel, and large blocks. An alluvial sand, different from the sand of rivers, is widely distributed in Poland, and is connected with the great sandy plain of Northern Germany. Vast numbers of blocks of stone occur in this plain, which are believed to have been transported from Finland by some great flood. The great mineral riches of the empire are found in the Ural and the Altai mountains; those in European Russia are few and unimportant. A tract, however, called the Central Mining District, extends from the Oka to near Kaluga, which is for the most part poor and sandy, but contains iron ore; and, as the metal is manufactured in the places where it is found, several extensive iron works have been erected in several quarters. At Petrozavodsk, on the west side of the lake of Onega, there are iron works, believed to be the largest in the north of Russia. Bog-iron-ore abounds in the neighbourhood, and for a long time was the only kind smelted, but other kinds are now wrought. Another great work of the same kind is situate three miles from St. Petersburg, on the Riga road. Finland yields copper and tin, but only one mine of the former is wrought. Coal is found in various places, in small quantities. One mine is wrought at Fula, and another at Bakhmout, in the govern-

ment of Iekaterinoslav. In Southern Poland are numerous beds of black bituminous coal, sometimes thirty feet thick, occurring in the secondary formations. In the tertiary districts deposits of brown coal are met with, which likewise yields amber. In the country to the north of the Caspian Sea are numerous lakes and marshes which produce great quantities of salt; and mines of that valuable article are also found in different parts of the country; a tract, called the Northern Salt District, stretches in a line parallel with the St. Petersburg limestone for 663 miles. The mineral first appears in the island of Oesel, and is worked at several places in Livonia. A central salt district is also described as existing in the course of the Volga; and along the Kama is a rich and extensive tract of marl, salt, and gypsum. The principal salt works are in the neighbourhood of Solikamsk; and the gypsum grottoes of Koungour, in the government of Perm, are large and magnificent. In Poland there are large mines of rock-salt, which form part of that enormous layer of fossil salt which extends along the Carpathian mountains, and is large enough to supply the whole world for an indefinite period. Copper-sand is found throughout a large extent of country in the governments of Perm, Viatka, and Ufa, completely skirting the south and west sides of the Urals. The sand is of a dull red or green colour, and is worked for copper; it contains also fossil wood impregnated with the metal. But it is in the Asiatic territory of Russia that the most abundant mines of copper are found, as well as those of gold, silver, platina, and other metals.

The geologist who has been accustomed to the diversified features which invariably characterize all the other countries of Europe in which the older sedimentary rocks exist, and has often had the utmost difficulty in ascertaining their succession and classification, in consequence of the great disturbances and alterations to which deposits of this age have been subjected; who has seen their frequent breaks, and sometimes even their entire reversal in limited areas, is delighted to find in so wide a portion of the earth's surface as Northern Russia those strata spread in horizontal unbroken sheets; each great formation trending for distances of a thousand miles, with few or no changes in its mineral characters or organic remains. The formations succeed each other in the following ascending order: — 1. Silurian Rocks; 2. Old Red or Devonian System; 3. Carboniferous System; 4. Oolite Series; 5. Cretaceous System; 6. Ferruginous Sands; 7. Chalk; 8. Tertiary Deposits; 9. Younger Pliocene; 10. Drift and Erratic Blocks.

1. *Silurian Rocks.* — The oldest stratified deposits of Russia are clays, sandstone, limestone, &c. which, from the organic remains they contain, are clearly the equivalents of the Silurian system of the British isles. These Silurian deposits occupy Oeland, Gothland, and other islands in the Baltic; also the shores of Courland, whence they trend in a broad bank from W.N.W. to E.N.E. till they are lost under vast heaps of granite detritus between the Lakes of Ladoga and Onega. At the northern end of the latter they are deflected to the north, and there meet with great ridges of trap rocks, which run from N.N.E. to S.S.W. In that region all the deposits are in a highly altered state, and the limestones present few distinct traces of fossils; but, from the nature of the country, no descending order between these rocks and the great primary granitic chain of Scandinavia and Lapland can be observed.

2. *Old Red*, or *Devonian System.*—This system is of enormous extent, ranging from the borders of Poland through Lithuania by the Lake Ilmen and the Valdai hills to the W.N.W., where it constitutes much of the shores of the White Sea. It consists of flag-stones, clays, marls, cornstone, and sandstones; the whole bearing a striking resemblance to the British deposits of the same age, from which however they differ, in containing copious salt-springs and much gypsum. Fishes are the distinguishing fossils of this great Russian system; and among these are species which have been described from deposits of the same age in Scotland. These fish-beds have been traced for many hundred miles, occupying several stages in the system.

3. *Carboniferous System.* — In the northern and central regions of Russia, only the lower or calcareous part of this system exists. The lower beds consist of incoherent sandstones and bituminous shale, which sometimes contain thin beds of impure pyritous coal, and impressions of several plants well known in the coal formations of Britain. These are overlaid with various bands of limestone, only the lower of which have some mineralogical resemblance to the mountain limestone of western Europe. Some beds are undistinguishable from the magnesian limestone of England; others from a pisolite; while a third great and very prevalent band, of considerable thickness, is milk-white, and not more compact than the *calcaire grossier* of Paris. This white producta limestone was observed by Messrs. Murchison and Verneuil from the neighbourhood of Moscow to beyond Arkhangel, a space of not less than a thousand miles, and was found to range far into the country of the Samoleds. This formation has also another mineralogical resemblance to chalk, in being loaded with thin bands of flint, which are sometimes concretions invested with corals. Associated with it, on the banks of the Dvina, about 133 miles above Arkhangel, and south of Susskaia, are splendid bedded masses of white gypsum or alabaster, which, for many miles, present at a little distance all the appearance of white limestone. These are probably the largest masses of this kind in Europe. The carboniferous limestone of Russia is highly fossiliferous, and from the normal and unaltered condition of the beds, the specimens are generally in an excellent state of preservation.

4. *Oolite Series.* — When Messrs. Murchison and Verneuil visited Russia, it was still problematical whether there was or was not a series of strata to connect the lower carboniferous beds above described with certain rocks of the Oolitic system, which have been long known to exist in the south of Russia. Certain of these beds, which rest at once on the great red formation along the banks of the Volga, between Kostroma and Nishnei-Novgorod, belong unquestionably to the middle Oolite. These Oolitic shales rest on the white carboniferous limestone of Moscow, affording a clear proof that coalfields are not to be looked for either in the country round Moscow, or anywhere to the northward.

5. *Ferruginous Sands, &c.* — The lias is covered with ferruginous sands, containing here and there large flattened concretions of grit, which are used for millstones; but no fossils have yet been observed in this rock. 6. The *Cretaceous System* is largely developed in the south of Russia, and a white shelly limestone, belonging to the *Tertiary System*, and overlying the chalk, has been found in the Crimea; but no such deposits have yet been discovered in any of the northern or central regions.

6. *Younger Pliocene.* — When Messrs. Murchison and Verneuil visited Russia, it was the general belief that all the great masses of superficial detritus, which cover so large an area, were referable to the diluvian epoch, when the bones of the great extinct quadrupeds were also imbedded; but, though the time to which their journey was restricted was not sufficient to enable them to make many distinctions of age among the different masses, yet they have discovered enough to demonstrate that, during the modern period, the whole of the vast flat country of Russia was beneath the sea for a considerable time.

Overspreading all the older formations, and greatly obscuring them, is a vast mass of detritus, the large granitic blocks of which have excited so much attention from the days of Pallas to the present time; and which seems to have been all derived from the north.—(" *On the stratified deposits which constitute the Northern and Central Regions of Russia," by Messrs. Murchison and Verneuil, reported to the meeting of the British Association at Glasgow, September* 1840. *Athenæum*, 800.)

SOIL AND VEGETATION. — In a country of so large dimensions there must necessarily be great variety of soils. There is a vast tract of country, of about 796,000 square miles (65,000 square geographical leagues), which possesses a peculiar and rather remarkable soil, consisting entirely of decomposed vegetable matter, which forms a stratum, varying in thickness from three to five feet. This tract is situated in the middle and south of Russia, stretching in a broad belt from Volhynia, in a north-easterly direction, to the foot of the Urals, near Perm, and southwards to the Black Sea and the Caspian. The land is so productive as not to require manure; and its fertility is proved by the large returns of grain which it yields, and the excellent breeds of cattle which are reared upon it. Considered generally, the territory of Russia, from the 44° to the 50° north lat. is for the most part low and level, scantily wooded, partly very fruitful, and partly barren, and here and there impregnated with salt. Between the Dnieper and the Dniester the soil is much impregnated with nitre; but, as soon as this is removed or diminished, wheat, millet, and the arbutus melon may be successfully cultivated. The mildest and most fertile region, however, is that succession of valleys along the southern coasts of the Crimea, where the vine and garden fruits, of excellent quality, are produced in such abundance as to form an article of commerce as far as Moscow. Proceeding eastward into the government of Astrakhan, only that part of the soil is fertile which extends along the low banks of the Volga, the Ural, and the Terek, in which tracts vegetables attain an enormous size. The soil is here impregnated with saline and bituminous substances. Higher up, the land on the Volga becomes sandy and unproductive. The soil of Little Russia and the Polish Ukraine is partly sandy, and not very productive; partly very rich and fertile. A great part of Western Russia is sandy, and is intersected by extensive marshes and bogs. Large tracts of it are likewise covered with forests; whilst no inconsiderable portion ranks amongst the most fertile in the empire. The middle region, extending from 50° to 57°, is the wealthiest and most densely peopled portion of Russia; and consists of wide, open, undulating plains, with only slight elevations to break the monotony. The northern region, from 57° to 67°, is, with the exception of the mountains of Finland, and the declivities of the Urals, a continuation of the same flat country, upon which forests, meadows, marshes, and moors, alternate. The poor starved soil ensures the husbandman a return only so far as the 60°, beyond which only slow-growing wood succeeds; and, beyond 67°, only dry stunted shrubs.

The Russian forests are the most important of the vegetable productions, not only from their enormous extent, but from their supplying in profusion the timber, tar, pitch, potash, and turpentine, which form a principal part of the commercial exports; and furnishing fuel, in a country nearly destitute of coal. Estimating the soil at 1,085,671,490 acres, 421,200,000 are occupied by forests; 480,600,000 by uncultivated land, water, houses, and roads; 166,050,000 by arable, and a little more than 16,700,000 by meadow land. So many as 205,200,000 acres are still completely covered with pines, firs, and other coniferous trees, without taking into account the oaks, maples, beeches, poplars, and elms, which are by no means rare in the latitudes within the 52°; and the birch, which grows in more northerly regions. The Scotch fir is by far the most abundant, and grows to a great height and size. Next to it in abundance is the common birch, which, however, is confined to particular districts, and is intermixed but little with the large forests. The other principal trees are beech, maple, elm, alder, willow, and ash, many of which attain a great height, though, in comparison with the pines, they form but a small proportion of the forests. The governments of Novgorod and Tver are studded with forests; that of Volkhonskoi, which extends to the Valdai hills, is one of the largest known. In the government of Perm, out of 48,600,000 acres, 45,900,000, or 17-18ths are forest. These immense forests are a great blessing in so rigorous a climate, as, besides supplying fuel, they form a shelter from the cold north winds. The provinces to the south have not the same necessity

for them, and are so destitute of wood, that grass and dung are generally used for fuel. The trees furnish timber of the finest and most durable quality, for house and ship building, household furniture, and utensils; and the firs even supply torches, which the peasantry use instead of candles. The brushwood, which covers a large extent of forest country, consists almost entirely of the hazel, dwarf-birch, alder, willow, and juniper; and, in some places, the wild bilberry and the cranberry, of the latter of which large quantities are exported. It is in these immense forests that the wild honey is obtained for which Russia is celebrated. The bees make their hives in the hollow trunks of aged or injured trees. The exportation of timber furnishes a considerable item of the government revenue, as well as of the private fortune of the proprietors, whose estates are within reach of water carriage, and is the principal source of labour to their peasants.—(*Short Account of the Forest Trees and Timber Trade of the Interior of Russia, by Wm. Howison, M.D.—Edin. Phil. Journal, XII. 56.*)

Russia is chiefly an agricultural country; and the cultivated land is so extensive, and yields, in many parts, such abundant crops of grain, that enough is produced, not only for home consumption, but also for exportation in considerable quantity. The grains most commonly cultivated are rye and oats; but, in Southern Russia, the best wheat with millet and rice are produced. Hemp and flax are very largely cultivated, and, besides supplying the home manufacture, yield a large surplus for exportation. While corn and cattle constitute the wealth of Central Russia, the south abounds in productions of a more precious and delicate kind. The cultivation of the vine, an indigenous plant, has been carried to a great extent in the southern part of the Crimea; but, though it has there the advantage of a good situation and a fine climate, yet the produce does not remunerate the labour of the vine-dresser, nor is the wine remarkable either for flavour or strength. The vine cultivation, however, is extending in the governments of Astrakhan, Kherson, Podolia, the country of the Don Cossacks, Taurida, and Caucasus. The mulberry tree has been as carefully attended to as the vine, and, upon the whole, with a favourable result. Large plantations of this tree have been formed near all the principal towns; and every encouragement is held out by government to the planters. In the Crimea and the Caucasus, the rearing of the silk-worm is rapidly extending. Experiments have also been made in cultivating sugar-cane and indigo, but hitherto without much success. There is, besides, in Southern Russia, a great variety of fruits and vegetables; and, in summer, the country everywhere presents the most enchanting aspect, and is covered with a profusion of the finest flowers and aromatic herbs. Russia likewise produces hops, tobacco, and garden vegetables of the usual European varieties. Spanish pepper is raised on the Samara and Lower Volga; poppy in Kharkoff; rhubarb grows wild in Taurida; rhapontick in the Urals; and the polygonum minus, which grows in the Ukraine, engenders worms that yield a beautiful crimson dye. Many plants, useful in dyeing, grow wild; and there are also several plants valuable in tanning.

ANIMALS. — The quadrupeds of Russia are numerous, and some of them appear to be peculiar to the country. Cattle of every kind are bred in vast numbers in the Steppes, and are increasing with the improvement of agriculture. Beeves are reared as far north as the 64°, but are most abundant in Podolia and the Ukraine. Some of the calves in the last province weigh from 480 to 600lb. Sheep are reared to a great extent, and are supposed now, not to fall short of sixty or seventy millions. Merino sheep have been naturalized in Little Russia, in New Russia, and in the Baltic provinces. Besides supplying the woollen manufactures at home, large quantities of wool are now exported. Great attention is also paid to the breed of horses, which thrive upon the Steppes; shawl wool-goats have been introduced; and, besides these, there are camels in Taurida and Kherson; asses in Taurida, swine, buffaloes; and, in the north, the reindeer, so valuable to the inhabitants of those sterile regions. The forests contain great numbers of bees, which yield an abundance of honey and wax for exportation. There are also many wild animals, the skins or furs of which constitute important articles of trade in the northern parts of the Empire; and abundance of others, whose flesh is used for food. Birds are very numerous; fish abound in the seas, lakes, and rivers; and the fisheries constitute an important branch of productive industry.

PEOPLE AND POPULATION. — No state in Europe presents a greater variety of races; but they may all be reduced to the following stocks: — The SLAVONIC, which comprises, 1. The *Russians*, distinguished as Great Russians or Muscovites, Little Russians, Rusniaks and Cossacks; 2. *Poles*, who inhabit the various governments which formed the late kingdom of Poland; 3. *Lithuanians*, *Lettons*, and *Kures*, who

are found along the coasts of the Baltic, and in the north-eastern part of Poland. The TSHOUDE,* or FINNISH Stock, which comprises the *Finns*, who occupy Finland, the *Carelians*, *Esthonians*, *Cheremisses*, *Votiaks*, *Lapons*, *Lives*, *Zyraines*, *Voguls*, *Permians*, *Mordva* or *Mordüins*, and a part of the *Teptiares*. These tribes are found on the coasts of the Gulf of Finland, and throughout Northern Russia. The TURKISH Stock, improperly called TATAR or TARTAR, which comprises the *Tartars of Kasan* and *Astrakhan*, the *Türkomans* of Caucasus, the *Nogais* and other Tartars in the Crimea, the *Bashkirs*, the *Chàvasches*, the *Metcherieques*, a part of the *Teptiares*, &c., extending over a large portion of the south-eastern and southern provinces. The GERMAN or DEUTSCH Stock comprises the *Germans* who live in the governments of Riga, Revel, St. Petersburg, Mitau, &c., and the numerous colonies in Saratov and Taurida. The GOTHIC Stock comprises the *Swedes*, who form a considerable portion of the population of Finland. Besides all these, there are many English, Scotch, Danes, and other foreigners, throughout the country, but chiefly in the commercial towns; Jews, Armenians, Moldavians, Wallachians, Persians, Calmucks, Hindoos, Samoyedes, and Laplanders. Of these various races, the Great Russians or Muscovites are the most numerous, comprising nearly three-fifths of the entire population. They are found chiefly in Central Russia, round Moscow, where the country is densely peopled, and where their numbers are rapidly increasing.

The Russians formerly bore the name of *Antes;* and consisted of several independent tribes, who formed a kind of confederation, till Rurik established a central government in the year 862. Rurik belonged to the Scandinavian tribe of Varing, and was invited to assume the government by the republic of Novgorod the Great; the citizens of which, being partly of Slavonian and partly of Tshoude or Finnish extraction, agreed, as one means of appeasing their mutual animosities, to select their rulers from a third nation. The Varing, as their name indicates, were a bold confederated people, and their country was called by the Tshoudes *Ruotzi*, or *Ruossimaa* (Uplandia, Roslagen in Sweden), for which appellation the Antes now exchanged their own, giving to themselves the name of Rusini, and to their country that of *Rûs*. Rurik's successors extended by conquest their authority over all the other tribes of Antes; and, having established their capital at Kioff, reached the zenith of their power, under Vladimir the Great. In the tenth century the boundaries of Russia were the Lakes Ilmen and Ladoga, the Upper Volga and the Oka, the Upper Don, the Lower Dnieper, and the Black Sea, down to the mouth of the Danube, the north-eastern chain of the Carpathian mountains, the Bûg, and the Upper Duna. Vladimir introduced Christianity into Russia (A.D. 983) according to the Greek ritual. His empire was subsequently overthrown by the Poles and the Lithuanians; and the greater part of it remained united with Poland till the close of the last century. The provinces, however, situated beyond the Dneiper, were conquered by the Tatars, and, on recovering their independence, in the sixteenth century, bore for some time the name of the Grand-duchy of Muscovy. The Muscovites, or Great Russians, as they are sometimes called, to distinguish them from the original or Little Russians, possess a less degree of Slavonic nationality than any other of the kindred nations, and are what historians term a bastard people; being composed of several tribes, as Slavonians, Tshoudes, and Tartars. Their language differs so much from the proper Russian idiom, that the latter is not understood by them without previous instruction, which is not the case respecting it with the Poles, Bohemians, and other Slavonians. Conscious of this absence of the Slavonian element, their learned men of the sixteenth century traced the origin of their nation to the *Ros*, a people mentioned by the prophet Ezekiel, instead of the Slavonian race; and the inhabitants of Great Russia, or Muscovy, have since called themselves *Rossianie*, and their country *Rossia*. Not less remarkable was the change which they introduced into the grammatical structure of their language; and their separation from the ancient Russians was completed when the latter, under the Polish Government, acknowledged the spiritual supremacy of Rome, while the Muscovite church declared itself independent of Constanti-

* *Tshoude* is only a remote approximation to the Slavonic word, which is variously spelled *Cud*, *Scud*, or *Czud*, the proper sound of which cannot be represented by any combination of Roman letters. Wherever the letters *cz*, *tz*, or *tsch*, are found in Slavonic names, as in Czar or Tzar, Galacz or Galatz, Priepecz or Priepetz, Tscheringov, &c., they are intended to represent the Slavonic *c*. Probably it might be better represented by the English *ch*, sounded like *tsh*, were it not that *ch* are rendered very equivocal by being sometimes pronounced like *k*, which makes *tsh* preferable, in order to prevent mistakes.—M. Safarik, in his Slavonian Antiquities, expresses his opinion that the ancient *Scythians* were of the Tshoude family; their name *Cud*, *Scud*, or *Czud*, he says, it would be impossible to render in Greek otherwise than by *Skuthes* or *Skuthai*. *Scythians*, some of our readers may not be aware, is only the English Latin form of the name. In Latin it would be properly pronounced *Skuthians*, the same as in Greek.

nople. — *Slavonian Antiquities, by P. J. Safarik, &c. — Foreign Quarterly Review, XXVI.* 70.

Among the various races above mentioned, the population is divided in the following proportions: — 1. *Slavonians:* Great Russians or Muscovites, 32,000,000; Little Russians, Rusniaks, and Cossacks, 6,000,000; Poles, 6,000,000; Servians, Bulgarian & &c. 1,000,000; Lithuanians, 1,300,000; Lettons, 400,000; Kures, 300,000. 2. *Tchoudes* or *Finns:* Laps, 25,000; Finns, 1,300,000 to 1,500,000; Esthonians, 500,000; Livonians, 1000; Permaks or Permians, 35,000; Zyraines, 30,000; Voguls, 100,000; Votiaks, 100,000; Cheremisses, 200,000; Chûvasches, 370,000; Mordûins, 100,000; Teptiares, a mixed race of Finns and Tartars, in the government of Orenburg, 50,000. 3. *Germans:* 450,000. 4. *Turks* or *Tartars:* Krim-Tartars, 246,000; Tartars of Kasan, 150,000; Nogais, 400,000; Metcherieques, in Orenburg, about 10,000. TOTALS: Slavonians, 47,000,000; Tchoudes or Finns, about 3,000,000; Germans, 450,000; Turks or Tartars, 806,000. Total, 51,256,000 in European Russia, exclusive of the province of Caucasus. — *Thadaus Bulgarin's Russland. Statistik.* 203, 4, 5.

There are no certain data for ascertaining the amount of the population; but the following is the Abstract of Returns obtained through the British Consuls, and may be considered as a very nearly approximative statement of the amount of the population of the whole empire in 1836.

(A.)—STATEMENT of the POPULATION of RUSSIA in the Year 1836.

Specification.	*Males.*	*Females.*
Class I.—Paying Taxes.		
A. IN TOWNS.		
1. Merchants of the 1st Guild:—		
Christians . with 704 Licences,	2,107	..
Mahommedans „ 6 „	19	..
Jews . . „ 36 „	218	..
Total,	2,344	..
2. Merchants of the 2d Guild:—		
Christians . with 1,439 Licenses,	5,008	..
Mahommedans, „ 8 „	36	..
Jews, . . „ 68 „	440	..
Total,	5,484	..
3. Traders of the 3d Guild:—		
Christians, . with 29,912 Licenses,	105,860	..
Mahommedans, „ 425 „	2,417	..
Jews, . . „ 2,573 „	12,749	..
Total,	121,026	..
Total of the three Guilds,	128,854	118,520
4. Burghers and Members of Corporations:—		
Christians,	801,496	..
Mahommedans,	15,557	..
Jews,	484,894	..
Total,	1,301,947	1,399,875
Burghers of the Western Government,	7,525	6,966
Inhabitants of Towns in Bessarabia, Masyles, and Rutpasches,	10,970	10,448
Persons of the low classes—Christians,	34,513	45,731
„ Jews,	12,322	
Foreign Artisans (not included in the Total),	603	..
Total of Division A,	1,496,231	1,581,537
B.—PEASANTS.		
1. Peasants on the private properties of the Emperor's family,	37,374	41,188
"Apanage" Peasants,	695,402	721,772
Peasants belonging to the service of His Imperial Majesty's Cabinet, of the Chief Intendent's Office, and of the Kremlin Expedition,	4,406	4,693
2. Domain Peasants:—		
a. Paying Poll Tax and Rent:—		
Odnodworzen (owners of one farm),	1,237,443	1,287,990
Peasants of the former Panzer-Bojars,	6,007	6,074
Cossacks of Little Russia,	533,691	555,275
Military Peasants in the territories of the Cossacks, Tepters, and Lostreibs,	99,368	98,883
Crown Peasants, of various descriptions,	4,819,620	5,390,883
Military Settlers,	59,454	50,775
Without Masters, received into the Service of the Crown,	1,342	1,454

Specification.	*Males.*	*Females.*
Purchased from the Prince Golitzyn,	19,396	20,347
In the Siberian Governments, born therein,	29,590	27,328
In the Siberian Governments, Settlers,	18,083	11,433
Employed in the various Crown Works and Manufactories,	159,988	165,673
b. Paying only Poll Tax:—		
Crown Peasants in the Western Governments,	102,401	102,155
Starostel Peasants,	213,457	201,584
Jesuit,	32,504	29,960
Peasants holding a Feudal Tenure,	13,151	16,434
Peasants upon Confiscated Properties,	116,607	117,728
Crown Peasants in the East-Sea Governments,	118,015	127,044
Moguls and Samoyedes, paying a tribute of Furs,	3,043	3,264
Settlers in Kamschatka,	410	371
c. Paying Special Taxes:—		
Owners of one farm in the Western Governments,	121,074	106,762
Free Persons in ditto,	129,532	129,690
Mahommedans settled in the Taurus Government,	124,592	105,703
Masyles and Rutpasches in Bessarabia, *viz.*, Christians,	249,486	224,463
„ Jews,	9,165	
Trans-Danubian Colonists,	20,197	18,827
Greeks, Grusinians, Bulgarians, Armenians, and Bukhars,	21,663	19,738
Jurten Tatars in Astrakhan,	10,905	8,872
Colonists settled on Crown Lands,	99,577	99,426
Jews engaged in Agriculture,	3,637	3,300
d. Employed in various services, and paying only Poll Tax:—		
Church Peasants in the Western Governments,	130,011	126,263
Jesuit Peasants,	14,074	13,705
Rural Clergy Peasants in the East-Sea Governments,	10,854	11,364
Belonging to Public Establishments,	26,303	27,092
Freeholders,	79,277	76,859
Belonging to Towns and Magistrates,	16,525	18,113
Belonging to Crown Studs and Manufactories,	146,925	158,302
Belonging to the Service of the Comandants of St. Petersburg and Kief,	3,106	3,174
Belonging to the Cadet Corps of Araktschejev,	2,225	2,299
Pilots,	1,167	1,259
Nomadic and wandering Tribes in the Siberian Governments, paying a tribute of Furs,	203,813	208,729
3. Peasants on Private Properties paying only Poll Tax:—		
Seignorial,	10,781,709	11,295,914
Domestic Servants,	451,272	
" Ordinat-bauern,"	83,676	84,135
Employed in Private Works and Manufactories,	46,989	48,582
Peasants of Owners of one Farm,	10,983	10,215
Free Owners of Land,	106	106
Peasants holding half a Farm (Hälftler),	2,723	2,580
„ in the East-Sea Governments, possessing peculiar privileges,	477,336	517,341
Total of Division B,	21,517,325	22,697,171
Total of Class I.	23,013,556	24,278,708

Class II.—Temporarily Free from the Payment of Taxes.

A. In Towns.

1. Merchants of the 1st Guild:—		
Christians, with 151 Licences,	208	..
Jews, „ 16 „	51	..
Total,	259	..
2. Merchants of the 2d Guild:—		
Christians, with 184 Licenses,	214	..
Jews, „ 27 „	25	..
Total,	239	..
3. Merchants of the 3d Guild:—		
Christians, with 1,050 Licenses,	1,420	..
Jews, „ 281 „	382	..
Total,	1,802	..
Total of the three Guilds,	2,300	2,050
4. Burghers and Members of Corporations:—		
Christians,	37,324	34,107
Jews,	163	
Total of Division A,	39,787	36,157

B. Peasants.

Domain Peasants, *viz.*—		
Odnodworzen (owners of one farm),	771	1,063
Crown Peasants, of various descriptions,	15,589	12,437
Settlers in the Siberian Governments,	18,494	13,230
Dwellers on Crown Lands in Bessarabia,	2,285	1,689
Trans-Danubian Colonists,	9,741	8,266

Specification.	*Males.*	*Females.*
Colonists,	1,525	1,351
Free Persons in the Western Governments,	352	407
Total of Division B,	48,757	36,843
Total of Class II.	84,544	75,000

Class III.—Not Paying Taxes.

A. CLERGY.

1. Græco-Russian.—*a.* Priests,	52,331	..
b. Church Servants,	63,178	..
c. Male children,	138,548	..
Total,	254,057	249,748
2. United Greeks,	7,823	7,318
3. Catholic,	2,497	Male & Fe.
4. Armenian,	474	343
5. Lutheran,	1,003	965
6. Reformed,	51	37
7. Mahommedan Mullas,	7,850	6,071
8. Lamas,	150	..
Total of Division A,	273,905	264,472

B. IN TOWNS.

Honorary Citizens,	193	144
Nessian Greeks,	897	897
Labourers in the Tula Manufactory of Arms,	8,634	8,634
Apothecaries' Pupils,	480	481
Town Brokers engaged in the service of Towns in the Government of Esthland,	28	28
On the Property of the Town Hospital in ditto,	843	900
Total of Division B,	11,075	11,084

C. PEASANTS.

1. Free Owners of Land in the Government of Olonetz,	418	411
2. Retired Soldiers,	32,146	36,879
3. Free Owners of Land in the Government of Kostroma,	105	121
4. Free Peasants in the Governments of St. Petersburg and Iekaterinoslav,	54	47
5. Peasants attached to the Imperial Palaces,	4,364	2,764
6. Pilots at the Waterfalls of the Dnieper,	1,289	1,328
7. "Post-Peasants,"	40,130	42,328
8. Church Servants dismissed on account of advanced age,	22	15
9. Orphans and Poor,	280	255
10. Salt-Carriers in the Government of Saratov,	166	189
11. Attached to Mines, Brandy Distilleries, and Saltworks,	127,006	102,707
2. Banished Criminals who must provide for themselves,	18,706	13,806
13. Grave-diggers in Bessarabia,	215	176
14. Pupils at the College of the General Asylum,	413	258
15. Servants of the "Archiereis" and of Convents, not exceeding the prescribed number,	5,639	5,548
16. Persons of various Rank, whose Origin and Classification are yet undetermined,	48,086	37,671
17. Nomadic Kalmucks,	44,532	44,532
18. „ Kirgheses, on this side of the Siberian and Orenburg Frontier,	161,505	177,450
19. Mahommedans of various Classes in the Caucasian Province,	29,678	40,000
Total of Division C,	524,754	507,435
Total of Class III.	809,734	782,991

Class IV.—Belonging to the Military Service.

1. Regular Military Colonies,	226,047	272,082
2. Cossacks, *viz.*—		
Of the Don,	214,362	215,033
„ the Black Sea,	60,268	50,802
„ the Caucasian Frontier,	67,645	66,970
„ Astrakhan,	6,284	6,420
„ Azov,	3,098	2,650
„ the Danube,	4,036	2,860
„ Orenburg,	47,120	48,777
„ the Ural,	23,642	22,202
Baschkirs and Metcherieques,	232,496	238,292
Kalmucks of Stavropol,	1,882	1,703
Of the Siberian Frontier,	45,636	46,277
„ „ Towns and Frontier,	18,182	17,409
Total of Class IV.	950,696	981,467

Class V.—Persons not included in the Revision Lists.

1. Nobles by Inheritance, who are entered in the Genealogical Register,	284,731	253,429
2. Personally Noble,	54,468	51,123
3. Children of Superior Officers,	24,454	23,150
4. Officials in Courts of Law,	24,666	17,194
5. Rasnotschinzes (Persons free from Tax, but not enumerated in any particular Class,	73,675	64,981

Specification.	Males.	Females.
6. Retired Soldiers,	88,708	155,268
7. Foreigners,	22,114	15,215
Total of Class V.	572,814	590,260

Class VI.—In the Trans-Caucasian Possessions.

1. In Grusia,	169,525	169,525
2. „ Imeretia,	76,119	76,119
3. „ Guriel,	15,533	15,534
4. „ the Provinces of Daghestan,	68,712	68,712
5. „ the Musulman Provinces,	166,761	166,761
6. „ the Provinces of Armenia,	82,315	82,316
7. „ the Paschalic of Akhalzykh,	17,143	17,143
8. „ Mingrelia,	30,804	30,804
9. „ Abikhasia,	22,345	22,345
10. „ the Khanat of Kusûkumeik,	15,000	15,000
11. „ „ Mechtulinsk,	10,000	10,000
12. „ the Free Communes of Akuscha,	15,000	15,000
Total of Class VI.*	689,157	689,159

Class VII.—Kingdom of Poland.

Total Population,	2,077,311	2,110,911

Class VIII.—Grand Duchy of Finland.

Total Population,	663,658	408,464

Class IX.—In the Possessions of the Russo-American Company.

1. Kaloeches,	5,761	5,292
2. Other Tribes dependent upon the Company,	25,000	25,000
Total of Class IX.	30,761	30,292
Total Population of the Russian Empire,	28,896,233	30,237,352
	59,133,585	

ABSTRACT.

Classes.	Males.	Females.	Total.
1. Paying Taxes,	23,013 556	24,278,708	47.292.264
2. Temporarily Free from the payment of Taxes,	88.544	75,000	163.544
3. Not paying Taxes,	809,734	782.991	1,592.725
4. Belonging to the Military Service,	950.698	981,467	1,932.165
5. Not subject to Revision,	572.814	583,360	1,156.174
6. In the Trans-Caucasian Possessions,	689.157	689.159	1.378,316
7. In the Kingdom of Poland,	2.077.311	2,110,911	4.188.222
8. In the Grand Duchy of Finland,	663.658	708,464	1,372.122
9. In the Russian Possessions in America,	30,761	30,292	61.053
Total,	28,896,233	30,237,352	59,133,585†

The increase of population in Russia appears to be equal to that in any other European country. The ratio of deaths to the population is one in 44, or, according to Hermann, one in forty; the proportion of births to the whole population is one in twenty-five; the general proportion of births to deaths in the whole empire is nearly 16 to 10; and the proportion of the births of males to those of females, is 44 to 40. According to Bulgarin's tables, the total number of births in the thirty years 1804–33, was 45,795,604; and of deaths 30,560,727; the former exceeding the latter by 15,234,877, and bearing the ratio of 156 to 100. The number of male births in the 33 years. 1801–33, was 25,960,115; and of female, 23,696,068, being a proportion of 109 to 100.—(*Thadaus Bulgarin's Russland Statistik. Riga and Leipzig* 1839.) The instances of longevity are remarkable. In 1821, when the deaths were reckoned at 945,088, of these 221 were above 105 years of age; 120, above 110; 78, above 115; 49, above 120; 16, above 125; five, above 130; one, 145; one, 150; and one, 155.

* The number of Inhabitants in the Trans-Caucasian Provinces here given is merely an approximation.

† Exclusive of the conquered and unconquered Mountaineers inhabiting the country between the Black and Caspian Seas, who are estimated at 1,445,000 individuals, and the Kirgheses, who are Russian subjects, but live beyond the Orenburg and Siberian Frontier, together with the "Double Tributaries," whose number is unknown.

The settled population of Russia is divided into six great classes, namely, Nobles, Clergy, Citizens, Peasants, Serfs, and Slaves. The *Nobles*, though distinguished by different titles, are all placed upon an equality. They have no political privileges whatever, and, though hereditary, have no rank but what the Emperor confers; their persons and lands, however, are free from taxation, from forced military service, and from bodily penalties. But these exemptions are more apparent than real; for, though their lands and persons are not taxable, yet a capitation tax may be imposed on their slaves, who form the most valuable part of their possessions; and they are bound to furnish from their estates a certain number of recruits in proportion to the demands of the service. There are fourteen classes of nobility; most of the public employments are filled by nobles; and none is eligible who does not belong to one of the fourteen classes of rank into which the officers of the civil and military service and the clergy are arranged. The *Clergy* are exempt from taxation and corporal punishment; privileges which are extended to their eldest sons, who are liable, however, to military service. Every inhabitant of a town, who is neither noble nor the property of another, is a *Citizen*; and citizens are divided into four classes, styled notables, and members of the three guilds. The next class is that of *Peasants*, or free inhabitants of the country, distinguished into six classes—*first*, the old proprietors who cultivate their own lands, but have not the right of possessing slaves; *second*, the Tartars, Baschkirs, and other races in the south-east, who are all proprietors of the lands they cultivate; *third*, the peasants of Finland, who are all now either proprietors or free-renters; *fourth*, colonists, of foreign origin, settled in different parts of the empire, to the amount altogether of 65,000; *fifth*, the inhabitants of the military colonies in the southern provinces; and *sixth*, the free cultivators, who enjoy immunity from taxes on condition of keeping post-horses for the public service, which they furnish at a charge regulated by government. Below the peasants are the *Serfs*,* who are chiefly peasants on the crown lands, or in the province of Livonia. The crown peasants amount to about twelve millions, some of whom labour in the fields, and others in the mines and manufactories. They may rise to the rank of citizens, and acquire property; they enjoy the protection of the laws, and, under some restrictions, may quit their residences for a limited time to obtain employment elsewhere; but they are liable to be hired for the service of the mines, or to be sold. The peasants of Livonia, amounting to about 560,000, were slaves until the year 1804, when they first obtained the rights of serfs. They are still subject to some peculiar claims, which, however, are fixed, and they cannot be removed from the soil without their own consent. The last and most numerous class is that of *Slaves*,* whose number is about 23,000,000. They are in law considered as *things*, not as *persons*; are attached to the soil, and incapable of acquiring property in land; may be bought, sold, or exchanged, with little more ceremony than cattle; and have no other protection against their master than a regard for his own interest in their welfare. They belong to the nobles, or to such civil or military officers as have acquired the right of possessing slaves. They are divided into agricultural, mining, manufacturing, or domestic slaves, and the only chance they have of improving their condition is their being drawn to serve in the army. A Russian proprietor reckons the value of his property, not by its annual income, but by the number of male slaves upon it; but the relation in which the agricultural serf or slave practically stands to his master, is in most respects that of a small tenant; the principal difference being, that he cannot change his employment or move from home, without his master's leave, which is sometimes obtained for a certain annual sum, called obrok, in lieu of service. As a general rule, he has a house and a portion of land, for which he pays rent in labour instead of money; working three days a-week for his master, and having the other three at his own disposal. The slaves are grossly ignorant, undoubting fatalists, and habitually careless and improvident; yet they are contented and happy, and bear about them no signs of oppression; their desires are few and easily satisfied; their fare is coarse and poor, but they seldom suffer from cold and hunger, and they are naturally gay, good humoured, and light hearted. They cannot legally be sold or transferred to another master, except with the whole of their family. The station of domestic servants is much worse than that of the agriculturists. As the riches of the Russian noble consist in the labour of his peasants, it is his study to turn that to good account; the law, besides, requires him to maintain them, and, if they are found begging, he is liable in

* These two classes are usually confounded under the common name of *serfs*; but, after all, the principal distinction between them is, that the former class belong to the Crown, while the latter are the property of subjects.

a fine. He is therefore obliged to keep always a certain number of people, whether they are useful to him or not: and as every kind of out-door labour is at a stand during the winter, he naturally turns to the establishment of some sort of manufactory as a means of employing them, and as a source of profit to himself. And not only are the nobles manufacturers, but they carry on the business in every branch; and their privileges give them great advantages over the other classes who are not allowed to possess slaves. No people in Europe are so plainly or coarsely fed. Their daily fare consists of pickled cucumbers, cabbages, and mushrooms, with a piece of black bread. Fish and butcher-meat are seldom tasted by the poor.

EDUCATION.—Previous to 1835, all the civil schools in the empire were dependent upon the universities established in the several circuits; but by an ukase, dated 25th June of that year, they were placed under the minister of public instruction, who is represented in the circuits by sub-delegates, called curators. Public education is thus subjected to the direct control of government. But, besides the minister of public instruction, each separate branch of the administration superintends the schools connected with its own department. The schools may thus be arranged in four classes:—1. Schools which depend upon the minister of public instruction; 2. Military schools; 3. Ecclesiastical schools; 4. Special and various other schools. The first class is subdivided into—1. Parish schools, intended for the lower orders, and allowed to teach only the catechism, reading, writing, and the first four rules of arithmetic, but which, far from being restricted to one in each parish, may be established wherever the want of them is felt; 2. District schools, which have three classes, intended for the children of shopkeepers, and are restricted in their course of instruction to the catechism, writing, drawing, the rudiments of grammar, arithmetic, geometry, geography, and history; 3. Gymnasiums, which are distributed by government, divided each into seven classes, and authorised to embrace higher studies, but accessible only to the children of the nobility; and, 4. Universities, which consist each of three faculties, philosophy, jurisprudence, and medicine, of which the courses last five years. The University of Dorpat has also a faculty of theology. The other universities are those of St. Petersburg, Moscow, Kharkoff, Kasan, White Russia, and Kief. The total number of gymnasiums in 1835, was 67; of infant schools, 2563; and of pupils, 85,707; the number of the last had increased, in 1837, to 95,560. The oldest of the universities, and only two that enjoy any reputation, are those of Dorpat and Vilna; the former established in 1630 by Gustavus Adolfus King of Sweden; and the latter, in 1567, by Stephen Bathory, King of Poland. The university of Vilna has been stripped of its rich endowments, libraries, and museums, which have been transferred to Kief, and is now reduced to two chairs, one of medicine, and one of theology. As a part of the general system, the Russian language has been substituted for the Polish in all the schools of Poland. Private schools are likewise placed under the inspection of the local authorities, and can make use of no books but those appointed by government. The establishment of new private schools is prohibited at Moscow and St. Petersburg, and is allowed in other places only to such foreigners as shall have resided five years in Russia, and have, by naturalization, become Russian subjects. No father has the power of selecting the instructors of his children at his own pleasure; he must take them from among the persons licensed by government, or furnished with an authority which gives them the character of public functionaries. Education in any foreign country is positively prohibited to all under 18 years of age, and even after that age, it is only the Emperor himself who can grant the necessary permission.

The military schools are those which chiefly engage the solicitude of the government; and, accordingly, they increase daily, and absorb the greater part of the funds allotted to national education. Nevertheless, there is no army so poor as the Russian in able officers; a circumstance which can be ascribed only to the bad organization of the schools, which are calculated less to diffuse knowledge than to supply the government with men less unmanageable, and more extensively and more variedly effective. These schools are divided into three classes:—1. Those under the direction of the Grand-duke Michael, which are dispersed over the empire under the titles of corps of pages, corps of cadets, &c.; 2. Those under the management of the Admiralty, designated corps of navy cadets, battalion of pilots, and of instruction for workmen, are to be found only at St. Petersburg, Cronstadt, Sebastopol, and Nikolaef; and 3. Schools dependent upon the ministry of war, which are especially appropriated to the children of soldiers, divided into brigades of cantonments, and situated in the military colonies.

The ecclesiastical schools, designed chiefly for the education of the clergy, are divided into three circuits, those of St. Petersburg, Moscow, and Kief. Each circuit is composed of superior schools or academies, of intermediate schools or seminaries, and of lower schools in the smaller districts and parishes. They are under the superintendence of the Holy Synod.

The special and various schools are superintended by different ministers, or are committed to the special inspection of members of the Imperial family. Under the Treasury are placed: — 1. The schools of mines at St. Petersburg, and in the principal mining districts; 2. The practical institute of technology, founded in 1828, intended to form master manufacturers, but still in its infancy; 3. The school of mercantile marine, founded in 1829 at St. Petersburg and Kherson, intended for the education of pilots; and 4. The institutes of foresters, trade, and agriculture, all recently founded, and of little importance. Under the Home Office are the schools of medicine, surgery, pharmacy, the rural schools for the cultivation of the vine, and of general horticulture, established in different places, but which have not yet come into operation; the schools for the sons of persons employed in subaltern situations in public offices, and who are supported by the state on condition of serving it for eight years; and the hospitals for orphans, and schools for the poor. Under the ministry of the Imperial Household are the Moscow academy of the fine arts; the Moscow school of architecture; the theatrical school of St. Petersburg; and the Court school of singers. The Ministry of Appanages supports some schools of agriculture, and primary schools for the peasants on the appanages of the princes. Under the general directory of roads and communications, is a school of civil engineers and conductors, organised in 1831 and 1832. Under the Ministry of Justice there has been, since 1835, a school of jurisprudence and one of land-surveying, intended to form lawyers and geometricians for the service of government. The Foreign Office, since 1823, has supported an oriental institute, consisting of six pupils, each with an allowance of £40 a-year, intended to supply with interpreters the diplomatic missions in Asia. The Empress has under her charge the foundling hospitals, the boarding-schools for young ladies at St. Petersburg, Odessa, and Moscow; and some patriotic establishments founded by private individuals, chiefly for the education of the children of indigent or invalid officers. The Grand Duchess Helena superintends the Maria institute at St. Petersburg, founded in 1797 for the daughters of citizens, and for the servants of the imperial palace; and also the school of Alexander at Paulowsk, founded in 1835 for children of both sexes. To these must be added the German schools of St. Peter, St. Anne, and St. Catherine at St. Petersburg, and those of the German colonies; the Tartar schools; and the Jewish schools; in the last of which, out of a Jewish population of one million, there are only 500 pupils. The total number of pupils attending all these is stated by M. Krusenstern* in 1837, as follows: — Schools of the Ministry of Public Instruction, 85,707; military schools, 179,981; ecclesiastical schools, 67,024; and all the others, 127,864; total, 460,576.

Besides the institutions occupied directly in the education of youth, Russia has also academies of sciences, learned societies, public libraries, and museums. The Academy of Sciences in St. Petersburg, founded in 1727, has acquired considerable celebrity; but, from its origin to the present day, it has been composed almost entirely of foreigners; scarcely one Russian name can be discovered among ten. Of the libraries, that of St. Petersburg contains 413,000 volumes; the library of the Hermitage, 100,000; the library of the Academy of Science, 90,000; and of the Universities of Dorpat, 60,473; Moscow, 50,712; Kief, 44,474; Kasan, 29,838; Kharkoff, 31,435; and St. Petersburg, 21,854. Among the museums, the Asiatic Museum at St. Petersburg is nearly unique in Europe, for the rarity and value of its collections. The museum of medals is likewise very interesting. In the whole empire 67 newspapers or periodical works are published. The Press is under a strict censorship, which, in university towns, is entrusted to committees, and everywhere else to censors specially appointed. The censorship of works relating to religion rests with the ecclesiastical bodies. Every book hostile to the creed of the Greek Church, to monarchical autocratic authority, to decency, to morality, to private honour, is prohibited; and the first duty of the censors is "to consider what is the object which the author has proposed to himself in writing his work."

* Precis du Systeme, des progres, et de l'etat de l'instruction publique en Russie, redige d'apres des documents officiels. Par Alexrde Krusenstern, Chambelan de SM. l'Empereur de Russie. Varsovie, 1837. There are abstracts of this work in the Marquis of Londonderry's "Recollections," vol. ii., and in the British and Foreign Review, No. 16, April 1839.

RELIGION. — The orthodox Greek church is the dominant religion of the empire; but all other religions are not only tolerated, but even freely professed, difference of creed being no obstacle to the attainment of public employments. The Russians, the Cossacks, Moldavians, Wallachians, and numerous proselytes among the Permians, Zyranians, Vogouls, Mordva, Samoyedes, Laps, and others, belong to the dominant church, which numbers about 45,000,000 of members. There are, however, some dissenters from its creed, named Raskolniks, &c. to the number of about 350,000. The Poles, Rusniaks, and Lithuanians, are Roman Catholics, or United Greeks; and the total numbers of that creed are about 3,500,000. The Finns, Lettons, Kures, Esthonians, Swedes, and Swedish Laps, and most of the German settlers, are Lutherans. Calvinism reckons but a small number of Poles and Germans. Islamism is professed by almost the whole of the numerous population of the Turkish or Tartar race, and the Arabs. The Jews, of course, follow the law of Moses. The Calmucks are worshippers of the Lama; and many of the Samoyedes, and other nomadic races, are idolaters or fetishists.

GOVERNMENT. — All power emanates from the Czar, whose authority is without limit or control. The title of *Samoderjetz* (autocrator), which the Czar assumes, indicates the nature of his authority, which he is presumed to derive only from God. He is the central point of the administration; and to his decision, or for his sanction, all important measures must be submitted. His authority is delegated to the great boards or colleges of the empire, which preside over the central administration, and to the governors-general, and other local functionaries. The three great Boards of Administration are, the Council of the Empire, the Directing Senate, and the Holy Synod. The first is divided into four departments, those of legislation, of war, of civil and religious affairs, and of finances. The ministers and a secretary of the empire form part of this board, which has the charge of all important affairs, with the exception of those relating to foreign policy. The Directing Senate is considered as the highest council of State. The Czar himself is its president, and he names the senators, whose number is indefinite. This Senate superintends the execution of the laws, and the receipt and expenditure of the public money; promulgates the laws and edicts authorised by the Czar, appoints to public employments, and judges as the last resort in all legal causes. The Holy Synod is the senate in which is vested the supreme authority of the Græco-Russian church, and is composed of a certain number of prelates, named by the Emperor, who is himself the sole head of the church, and presents to all ecclesiastical offices. The executive power is confided to ministers and secretaries of state, who form a fourth board, named the Committee of Ministers, but which is subordinate to the three great bodies already mentioned. Russia is a monarchy, absolute and hereditary, but the various parts of the empire present considerable differences in their administration, and some of them are governed according to the ancient privileges which they have preserved, or to the constitution granted to them at the period of their union with the empire. Thus the Cossacks of the Don, and of the Black Sea, form military republics, under a first magistrate, named their *hetman*, who forms the organ of communication with the Emperor; but, by various gradual changes, their privileges have been at last almost annihilated, and their territories reduced to the condition of ordinary provinces. Finland also forms a grand-duchy, with a constitution entirely different from that of the other parts of the empire. Livonia, Esthonia, and Courland, also enjoy considerable privileges; but still, these privileges are held at the will of a despot, who may abrogate them whenever he pleases. Poland now forms an integral part of the empire; though it has a separate administration and particular laws, which cannot be all at once superseded by those of Russia. The present Emperor, Nikolai or Nicholas, is the grand-son of Charles Peter Ulric, Duke of Holstein-Gottorp, who was the son of Anne, one of the daughters of Peter the Great, and who, having been adopted as her heir by his aunt, the Empress Elizabeth, succeeded her by the name of Peter III. in 1763. He was deposed soon after by his wife, the celebrated Empress Catherine the Second, who reigned till 1796, when she was succeeded by her son Paul, the father of Nikolai, and of the late Emperor Alexander. The male line of the House of Romanow, raised to the throne of the Czars in 1613, became extinct in 1727, by the death of Peter II., the son of Peter the Great.

FINANCES. — The revenues of the empire arise chiefly from a capitation tax of two roubles on each peasant, and five on each burgher; a tax of 1¾ per cent. on the capital of merchants; rents of the crown-lands of peasants, customs, stamps, patents, &c.; the monopoly of spirituous liquors and salt; mines, purchase of exemp-

tion from military service; fines on smugglers and other delinquents; the crown fisheries, mills, manufactures, baths; the profits of the mint, and the post-office; and the tribute in furs paid by the nomadic races. The total income for 1836 amounted to about £14,200,000 sterling; allowance, however, must be made for large sums never carried to the general account, but either appropriated to local purposes, or paid in kind by various sections of the population. This is the case with the rent of the fisheries of the Ural, which either serves as pay for specific services, or is assigned in perpetuity to certain classes of the community, so that it never appears among the public receipts. In some districts also the capitation tax is commuted for labour or military service. To the sum above stated may also be added about £262,000 as the produce of the gold and platina mines. On the 1st January, 1834, the imperial debt amounted to 933,871,673 paper roubles, or £40,356,885 sterling; but a large sum is annually appropriated to its extinction. There is little gold in circulation; the only silver coin is the rouble (3s. 1½d.), and its aliquot parts of halves, quarters, tenths, and twentieths. There is a large copper circulation of kopecks, one hundred of which are equal to a paper rouble (10s. 0¾); indeed, the only true metallic currency may be said to be the copper.

ARMY AND NAVY. — The ordinary establishment of the army consists of—1. The Guards, 8 regiments of infantry, 8 of cavalry, 3 squadrons of Cossacks and Tartars, artillery and artificers — 27,200; 2. Infantry of the line in the field, 127 regiments; in garrison, 36 battalions — 381,800; 3. Regular Cavalry, 68 regiments, with 38 regiments of Cossacks, 87,000; and Irregular Cavalry, 51,000 — together, 138,000; 4. Artillery, 44,300; 5. Extra corps, 27,000; 6. Officers of various ranks, 20,000, —total, 640,300. To these must be added the reserve in the military colonies, 80,000, and Polish troops, 10,000 — making a grand total of 730,300 men, with 90,048 horses belonging to the regular cavalry; 15,732 to the artillery; and 38,586 to the irregular troops. The army is distributed into eight grand divisions, namely, 1. The Guards; 2. The army of the South; 3. The army of the West; 4. The army of Lithuania and Poland; 5. The corps of the Caucasus; 6. The Finland corps; 7. The regiments of the military colonies; and 8, The army of reserve.* The expense of this vast force is comparatively small; the articles for their equipment, provisioning, and arming, being of the cheapest and coarsest kind, and the pay of both officers and men being very low. But the Russian currency being in paper roubles, which bring only one-fourth of their nominal value, as soon as the troops cross their own frontier, their right to receive their pay in silver roubles is acknowledged by the Emperor; so that the mere pay of an army on foreign service is four times as great as when they are at home, besides all other expenses.

The number of the army is kept up by conscription. When new levies are wanted, orders are issued to the head men of villages, each of which is required to furnish a certain number, according to the amount of its population. The Russian soldier is docile, submissive, and brave; like all slaves, he is pliant, subservient, and cunning; and, like all natives of the north, he is hardy, patient, and enduring. The moral force of the army consists in a certain undefined ferocity, which such men as Suvaroff can alone fully develope. The cavalry colonies in the south of Russia have attracted much attention; but they are nothing more than permanent cantonments of regiments of cavalry in districts belonging to the crown, quartered upon the inhabitants, and receiving from them regulated rations. They are, however, recruited from the youth of the villages where they are quartered; but, during the whole period of their actual service, their duties are purely military. The force of these cavalry colonies is great, and consists of five divisions, each composed of four regiments, of about 1200 effective men each, besides depot and reserve squadrons, and the regimental tradesmen and staff. Three of the divisions are cuirassiers, and two are lancers.

The Russian navy may be said to be the creation of the present Czar Nicholas. He maintains two large fleets in the Gulf of Finland and the Black Sea; but the exact amount of their force and their available resources are, and for several years have been, a subject of endless dispute amongst naval men and politicians. It is at least certain, that the Czar spares neither cost nor trouble on his favourite object; but, on the other hand, the ships are manned by landsmen, who have no naval experience

* *United Service Journal*, xiv. 245.—Mr. Bremner, however, says that "It is impossible to learn anything certain respecting the army. It is impossible even to ascertain the number of the officers, there being neither army list nor guide of any other kind published by the Government;" and the Marquis of Londonderry says that "It is very difficult to get at exact information, as on this head the greatest secrecy prevails."

beyond what they derive from a short summer cruize in their narrow seas, or from harbour practice; and, owing to the gross corruption and peculation that pervade every department of the body politic in Russia, the vessels are so insufficiently built as to be fit for service only a very few years, and some of them even, it is alleged, are almost useless before they are fitted out for their first voyage,—every part of the material being supplied of the worst quality, at the highest price. To every ship of the line there is assigned a regiment of 1100 men, who suffice not only for the larger ship, but also for the smaller vessels attached to it. The crews of the Baltic fleet amounted, in 1837, to not less than 30,800 men; and those of the fleet in the Black Sea, to 19,800, or, altogether, 50,600. The officers are supplied from the two Cadet Colleges, and sent to sea in the fleet every summer. The ships generally become unserviceable in nine or ten years.

PRODUCTIVE INDUSTRY.—The agriculture of Russia was, till recently, of the rudest kind; but within the last few years considerable progress has been made in improving it, partly through the exertions of Government, and partly through those of the landed proprietors. The annual production of grain, on an average of five years, has been calculated to amount to 134,818,920 English quarters, of which three-ninths were required for seed, leaving nearly ninety millions of quarters for consumption and exportation. For the encouragement of agriculture the following societies have been established:—The Imperial Free Economical Society at St. Petersburg, in 1765; The Imperial Agricultural Society of Moscow, in 1819; The Agricultural Society of South Russia, in 1828; The Livonian Economical Society, in 1796; The Esthonian Agricultural Society; The Polytechnic Society in Kharkov; The Economical Society of Abo, in Finland; The White-Russian Free Economical Society, established in 1824 at Vitepsk.—(*Bulgarin*, 258, *&c.*) Great progress has also been made in manufacturing industry. In 1815 the total number of manufacturing establishments was estimated at 3250, employing 150,000 workmen; in 1836, the number was 6045, with 279,673 workmen. Formerly Russia imported only manufactured goods, but she now imports large quantities of raw material for the use of her manufactures, and strictly prohibits the importation of every thing that can compete with them. The distillation of corn brandy, or whisky, is still the most extensive and lucrative branch of industry, and produces to the Government annually an excise-duty of ninety millions of roubles; the use of it is universal among the peasantry; who also consume to a great extent a kind of beer called braga. It is but of late that the Russians have applied themselves to the working of mines; but considerable quantities of metal are now produced. During the ten years, 1824-34, the average quantity of gold produced from the Ural mines and coined, amounted to 10,687 lbs., and of platina, 2557 lbs.; but in 1836, the gold mines did not yield more than 4580 lbs.; and those of platina only 17½ lbs. The quantity of gold, however, obtained in the same year, from private mines, was 4860 lbs., and of platina 4948 lbs. The silver mines yield annually about 43,200 lbs., besides 1,440,000 lbs. of lead. The aggregate amount of copper from the Government and private mines is 7,596,000 lbs. The principal iron mines are situate in Finland. The smelting of the ore is performed by eight different furnaces; and nearly the whole of the iron produced is distributed among the forges in different parts of the country. Finland likewise produces copper. Iron of the best quality is also found at Tula, which is a great seat of the iron manufactures of Russia. The salt lakes in the Steppes produce immense quantities of salt, to the amount, it is said, of 324,580 tons. Alum is produced to the yearly amount of 576,000 lbs.

The fisheries of Russia are not the least important branch of industry. A prodigious quantity of fish is supplied by the lakes and rivers; and of these the Volga and the Oka are particularly productive. The principal kinds of fish are sturgeon, bieluga, and salmon, besides carp, pike, and trout. The Black Sea likewise produces lampreys and mackerel; and a kind of herring is found both there and in the Sea of Azov. Caviare, the consumption of which is very great in Russia, is made from the roes of the sterlet, a variety of the sturgeon, and from those of the bieluga. A single sterlet yields from ten to thirty pounds weight, and from a single bieluga, there may be taken sometimes as much as 120 lbs. The best caviare is prepared by the Cossacks of the Ural. The net annual value of the Russian fisheries amounts to more than ten millions of roubles. The fisheries of the Caspian, and its tributary rivers are by far the most important. They generally belong to the villages and cities in the Government of Astrakhan, but pay a yearly impost to Government. Those situated in the territory of the city of Astrakhan belong to Prince Kourakin, but he has gratuitously ceded to the citizens the right of fishing. The most extensive fishery, that of the Iemba, extending along the shores of the Caspian from the mouth of the Ural to the gulf named Mertvoi-Kultuk, a distance of 345 miles, has also been free since 1803. At the mouth of the Terek there is another fishery, deriving its name from the island of Tchetchen, just opposite, on which the fishermen reside, and salt and smoke the fish. The Russians even are allowed to monopolize the fishery at the mouths of the rivers of Mazenderan. The principal objects of their attention are four species of the sturgeon, namely the common sturgeon (accipenser sturio), the sevriouga (accipenser stellatus), the bieluga (accipenser huso), and the sterlet (accipenser ruthemus.) The mode in which the fish are taken is extremely rude and inartificial; and when taken are placed on rafts where they are gutted, and the roes, the back-bone, and the sounds or swimming bladders carefully separated. The fish themselves are then carried to huts where they are salted; the roes are placed in a reservoir, to separate the fatty matter, after which, being pickled and barrelled, they constitute caviare. Sturgeon being a cartilaginous fish, have scarcely any earthy matter in their bones, which are in fact rather a highly elastic flexible gristle; their spines therefore being rich in gelatine, are, together with the ligaments and capsules, saved, and constitute what is termed fish cartilage. Lastly, the sounds are dried in the sun and become isinglass. Seals are also found in the Caspian, and from 60,000 to 100,000 of them are taken annually, for the sake of their skins and blubber. The fisheries take place every year in the following order—first, the spring fishery, at the breaking up of the ice, when the greatest quantity of caviare is made; second, the summer fishery, when, from the lowness of the rivers, the fish are returning to the sea; third, the autumn fishery, from September to November, when the sturgeon, of all the species, are ascending the rivers, and seeking deep pools in which to spend the winter. Many of them, however, still remain behind, so that they are fished for in winter also, by means of nets sunk through holes in the ice. During this season the fishermen proceed several versts from shore on the ice; and it frequently happens that during their fishing an impetuous wind suddenly blows off shore, and drives the ice into the deep sea, where they are inevitably lost, unless the wind change and drive them back again to land.

The commerce of Russia is very considerable, and internal traffic is annually increasing. Nineteen fairs have been established in the principal towns, and thirteen in the smaller ones. A great number of bazaars have likewise been erected. The great centre of the inland trade is at Nishnei-Novgorod, the annual fair at which place is perhaps the largest in the world, and is attended by traders from all parts of European and Asiatic Russia, from Khiva, Bokhara, and Persia, who bring with

them the produce of their own country, and carry home in exchange the productions of Western Europe and America. The fair lasts during August and September, and is generally visited by about 150,000 strangers. The annual value of the goods actually sold, in 1836, amounted to 117,743,300 roubles. The value of merchandize sold at all the fairs in 1836 amounted to £10,500,000 sterling. With respect to the maritime commerce of Russia, the value of the merchandize imported in 1835 amounted to £8,563,461, and exported, to £8,550,459. The imports consisted of coffee, spices, wines and liquors, fish, salt, tobacco, fruit, raw cotton, cotton twist, indigo, cochineal, madder, logwood, and other dyewoods, drugs, olive-oil, hardware, lead, raw sugar, silk, cotton, silk, and worsted goods, cloths, and precious stones; but the importation of every sort of manufactured or other produce that can compete with the manufactures or natural productions of Russia is expressly prohibited. The exports consisted of wheat, rye, barley, oats, wax, raw hides, tanned leather, flax, hemp, timber, potash, hemp oil, linseed oil, copper, iron, tallow, linseed, wool, bristles, cordage, sail-cloth, ravens, ducks, fiems, cattle, furs, hair, skins, &c. The largest articles of export were tallow, to the value of £1,639,122; hemp, £822,796; wheat, £521,100; flax, £825,843; linseed, £815,999. The principal seats of the maritime commerce are—St. Petersburg, Cronstadt, Riga, and Revel, on the Baltic Sea; Arkhangel and Onega, on the White Sea; Odessa, on the Black Sea. St. Petersburg alone engrosses about one-half of the whole foreign commerce of the empire.

INTERNAL COMMUNICATION. — The roads throughout Russia are, in general, very bad; in some places they are formed with trunks of trees laid across, and in others they are mere tracks; but of late some good roads have been formed, and particularly the great road from St. Petersburg to Moscow is said to be without exception the finest in the world. It has been macadamized throughout, and lined with trees; and at the end of every seven or eight versts there is a station for a corporal and a party of soldiers, whose duty it is to keep it in repair.—(*Bremner.*) A magnificent road likewise leads from the capital to Czarskocelo, with marble pyramids to mark the distance in versts, and lighted by nearly 2000 lanterns. A railroad has also been formed between St. Petersburg and Czarskocelo; and it is the Emperor's intention to form another between St. Petersburg and Moscow, with branches perhaps to Odessa, and other places. But one of the most striking features of the country is the great extent of both natural and artificial communication by water. All the great rivers, lakes, and seas, have been connected by canals; so that there is uninterrupted communication from the Baltic to the Black Sea, the White Sea, and the Caspian. The principal of these canals are:—

The *Canal of Vishnei-Volotchk* connects, by means of the Zna, an affluent of the Tvertsa, and of the Chlinia, an affluent of the Msta, which flows into Lake Ilmen, the Volga to the Volkhov, an affluent of Lake Ladoga. It is three miles long, and has three sluices. It was first opened in 1711, but only completely finished in 1818.

The *Canal of Tikhvine*, projected by Peter I., but begun and finished by Alexander, connects the Tikhvinka, an affluent of the Sias, which runs into Lake Ladoga, with the Volga, by means of several rivers, as the Somnia, the Gourounia, the Ichagoda, and the Molaga.

The *Maria Canal*, projected by Peter I., but begun only in 1799, and finished in 1808, connects two rivers rendered navigable in the upper part of their course, viz. the Kovja, an affluent of the Bielo Lake, and the Vytegra, an affluent of Lake Onega. It is four miles long. Two important accessary canals are connected with this main branch; one of them nearly 40 miles long, between the Cheksna and the Kovja; and the other, 26 miles long, called the *Svir Canal*, between the Svir, an affluent of Lake Ladoga, and the Vyterga, an affluent of Lake Onega.

The *Canal of Ladoga*, begun in 1718, and opened in 1731, runs along the south side of the Lake of Ladoga, and connects the Volkhov with new Ladoga and the Neva. It is the most frequented of all the canals; and it is said that 25,000 vessels of every kind annually pass through its principal sluice at Schlusselburg.

The *Canal of Novgorod*, or of *Sievres*, about 5 miles long, connects directly, in the environs of Novgorod, the Msta and the Volkhov, in order to avoid the dangerous navigation of Lake Ilmen.

The *Canal of Sias* connects the river of that name with the Volkhov, where the latter flows out of Lake Ilmen.

The *Canal of Kubensk* connects the Cheksna, an affluent of the Volga, near Kirilov, in the government of Novgorod, with the Lake of Kubensk, which discharges its waters into the Sukhona or Sukhonia, one of the branches of the Northern Dvina, and thereby establishes a communication between the Caspian Sea and the White Sea. By means of the Maria Canal it also communicates with the Baltic.

The *Northern Canal*, or the *Severo-Iekaterinski*, begun by Catherine I., but only finished in 1820, connects the Keltma, an affluent of the Vitchegda (an affluent of the Dvina), with the Dguritch, which belongs to the basin of the Kama, an affluent of the Volga.

The *Canal of Lepel*, or of the *Berezina*, finished in 1801, connects the Duna with the Dneiper, and is about 5 miles long.

The *Canal of Oginski*, begun in 1765, finished in 1787, and rendered completely navigable in 1801, connects the Iasialda, an affluent of the Priepecz, with the Szczara or Chtchara, an affluent of the Niemen, 36 miles long.

The *Royal Canal*, formed in 1775, at the expense of the Polish Government, connects the Pina, an affluent of the Priepecz, with the Muchaviec, an affluent of the Bug.

The *Canal of Ioanov*, in the government of Tula, connects the Chata, an affluent of the Upa, belonging to the basin of the Volga, by means of the Oka, with the upper part of the course of the Don.

The *Canal of Fellin*, in Livonia, connects the Embach, an affluent of Lake Peipous. Another canal, that of *Verro*, connects the Lake of Pskov, a portion of the Peipous, with the Aa, which runs into the Gulf of Riga.

The *Canal of Velikia-Luki* connects the Duna with the Neva, by means of the Lovat, Lake Ilmen, Volkhov, and the Lake of Ladoga.

In order to enable the productions of Russia and Poland to reach the Baltic, without paying Prussian customs, canals have been projected to connect the Vistula with the Niemen and the Duna. The *Canal of Kurland* is one of the principal branches; but none of them are yet finished.

One of the finest canals in the empire is that which has been formed on the south side of St. Petersburg, with the double intention of preventing any approach to the city, except through the barriers, and of affording a commodious and safe harbour for the numerous barges which arrive loaded with the inland produce.

ADMINISTRATIVE DIVISIONS — Russia in Europe is divided into 47 eparchies or governments, exclusive of the territory of the Don Cossacks, which forms a sort of military republic; the Grand Duchy of Finland, which has a separate administration; and the kingdom of Poland. The Russian Government make no distinction between Europe and Asia, so that some of the governments are in both. Finland is divided into seven governments, and Poland into eight palatinates. The other

governments are subdivided into circles. The following table contains the names of the governments, their area and population in 1836.

Governments.	*Area in Square Miles.*	*Population.*	*Governments.*	*Area in Square Miles.*	*Population.*
I. BALTIC PROVINCES.			Kherson,	23,356	607,949
St. Petersburg,	15,087	509,004	Taurida,	43,348	543,020
Esthonia,	6,694	280,612	Bessarabia,	16,873	503,666
Livonia,	17,653	740,089	Don Cossacks,	108,120	527,472
Kûrland or Courland,	9,094	503,010	V. WEST RUSSIA.		
Finland,	136,127	1,372,122	Vilna,	24,693	1,315,780
II. GREAT RUSSIA.			Grodno,	12,112	761,880
Moscow,	11,688	1,240,283	Vitepsk,	16,533	702,226
Smolensk,	20,772	1,031,466	Mohilev,	17,510	802,100
Pskov or Pleskow,	22,206	693,727	Minsk,	41,183	955,714
Tver,	21,718	1,297,947	Volhynia,	22,801	1,314,117
Novgorod,	43,988	735,170	Podolia,	12,240	1,548,155
Olonetz,	50,022	236,070	Bialystock,	3,443	261,014
Arkhangel,	323,255	240,896	VI. KINGDOM OF KASAN.		
Vologda,	146,300	732,223	Kazan,	23,470	1,309,432
Iaroslav,	17,149	933,180	Viatka,	53,061	1,504,097
Kostroma,	30,557	972,102	Perm,	57,821	1,488,800
Vladimir,	17,658	1,127,471	Simbirsk,	24,246	1,198,576
N. Novgovorod,	18,657	1,076,363	Penza,	14,322	986,179
Tambov,	23,480	1,580,259	VII. KM. OF ASTRAKHAN.		
Riasan,	15,024	1,211,223	Astrakhan,	86,530	103,388
Tula,	11,211	1,074,687	Saratov,	73,801	1,543,477
Kaluga,	11,496	917,537	Orenburg,	138,819	1,595,843
Orel,	16,044	1,342,912	VIII. KM. OF POLAND.		
Kursk,	16,473	1,503,022	Cracow,	4,492	489,000
Voronejc,	28,773	1,492,223	Sandomir,	5,998	894,000
III. LITTLE RUSSIA.			Kalisch,	6,825	740,000
Kief or Kiev,	16,957	1,459,782	Lublin,	6,742	484,000
Tchernigov,	19,085	1,312,592	Plock,	6,162	458,000
Poltava,	22,568	1,621,583	Masovia,	8,948	770,000
Kharkov,	17,956	1,171,456	Podlachia,	4,845	350,000
IV. SOUTH OR NEW RUSSIA.			Augustova,	6,842	478,000
Iekaterinoslav,	25,203	774,768		2,045,376*	52,943,847

TOPOGRAPHY. — Our narrow limits render it impossible for us to notice in detail the numerous cities and towns whose names occur in the map of so large a country. We shall therefore confine ourselves to giving a list of the principal towns, with their population, arranged according to the governments in which they are situate, with short notices of the more important places.

1. *St. Petersburg.* — ST. PETERSBURG, 448,000; Cronstadt, 40,000; Narva, 5000; Czarskoe-selo, 11,000; Schlusselburg, 7600; Novaia-Ladoga, 1648; Gatchina, 1603; Paulovsky, 1000; Oranienbaum, 1200; Jamburg, 677; Sisterbek.

ST. PETERSBURG, the capital of the empire, is situate on the banks of the Neva, where it enters the eastern extremity of the Gulf of Finland. The Neva, flowing in one great stream from the Lake of Ladoga, here divides into two branches, named Neva and Nevka; each of which again divides into two, named the Big and the Little Neva, and the Big and the Little Nevka; and these, before reaching the sea, still further subdivide, forming a number of low marshy islands; besides which the Admiralty Quarter is intersected by several large canals, forming so many more subdivisions. The principal part of the city, named the Admiralty Quarter, is situate on the mainland, along the south side, or left bank of the Neva; another large portion occupies the eastern half of Vassilii Ostrof (Basil's Island), between the Big and the Little Neva; a third portion, containing the Citadel and Old St. Petersburg, the original foundation of Peter the Great, occupies a large island between the Neva, the Little Neva, and the Nevka; and a fourth portion, the Viburg quarter, extends along the north bank of the Neva and Nevka. The communication between these is maintained in summer by means of three large floating bridges, and in winter by the solid frozen surface of the Neva. The bank of the river is lined with stupendous granite quays, and the principal public buildings and ornaments of the city are arranged along the Neva, mostly in the Admiralty quarter. The streets are in general wide and very regular, running in straight lines, but intersecting each other at different angles, except in the Vassilii Ostrof, and some other places where they cross at right angles, though not arranged in exact or equal squares. Most of the streets are from 60 to 120 feet wide; the length is various; there are six or eight about 6000 feet long; two or three still longer; the principal street, named Nevski Prospekt, is 14,350 feet long, and the Great Perspective in the Vassilii Ostrof, 10,220 feet. Many of the houses are built of brick, stuccoed or plastered; but most of them are built of wood. A few of the streets and some of the squares have been macadamized; most of them are paved with small stones; but footpaths formed of granite flags have been recently introduced into almost every street, and no new streets can be formed without them. The city is divided into twelve districts, four of which are in the Admiralty Quarter, and each of these is subdivided into sections, the names and numbers of which are marked in large letters at the corner of every street; the houses are also regularly numbered; and a complete drainage is effected by sewers, arched over with brick, and having a gentle inclination to the river.

The principal public buildings are, — The Admiralty, nearly in the centre of the city, on the left bank of the Neva, a very extensive and handsome building, surmounted in the middle by a richly gilt

* These numbers are taken from the Gotha Almanack for 1839, only converting the German miles into English.

spire, and enclosing a dockyard between it and the river; the Imperial or Winter Palace, a large and imposing pile; the palaces called the Hermitage, the Marble Palace, the barracks of the guards Preobrajenskoi, and others, which form altogether an uninterrupted line of splendid edifices, upwards of a mile in length, and unequalled in any other city in Europe. Opposite this splendid range is the Citadel, with its low bastions of granite encircled by the Neva, and rendered conspicuous by the tall, slender, and richly gilt spire of its church of St. Peter and St. Paul, which contains the mausoleum of the Imperial Family. Looking to the east from the citadel, the Neva is seen spreading into a wide expanse like a bay, on the distant shores of which several other handsome buildings are discerned, particularly the great naval and military hospitals; while to the westward, the eye rests upon the magnificent portico of the Exchange, between two colossal rostral columns, at the eastern point of Vassilii Ostrof; and beyond them, the palace and observatory of the Academy of Sciences. A colossal equestrian statue of Peter the Great, upon a massive granite pedestal, erected by Catharine II.; the Senate House, the War Office, and St. Isaak's Church, are all situate in the area to the west of the Admiralty. The church has been building for forty years, and is expected to be completed in 1842, when it may challenge the world to produce its equal for external character and sumptuousness of material. It is of a square form, with an octostyle portico on each of its four faces; and is surmounted by a large dome in the centre, 340 Russian (nearly 400 English) feet high, and four smaller ones at the corners. The whole outside is built of marble, granite, and bronze; each of the columns consists of a single granite stone 58 feet high, and the dome is to be gilt with ducat gold. Another fine church, that of our Lady of Kasan, has recently been erected nearly upon the model of St. Paul's, London, in the form of a cross, with a central dome; but having its principal entrance at the north end of the transept, which communicates with the street by a semicircular colonnade, in imitation of the piazza San Pietro at Rome. The Taurida Palace, at the east side of the city; the palace of the Grand Duke Michael, a stately new building; the hotel of the Staff, in front of which is the fine granite monolith column (12 feet in diameter, and 84 high), erected to the memory of the Emperor Alexander; and the cottage of Peter the Great, in the citadel, may also be mentioned as worthy of notice.

St. Petersburg was founded by the Czar, Peter the Great, in 1703, for the purpose of securing a maritime communication between his empire and the rest of Europe; and the city now engrosses the half of the foreign commerce of Russia. It was dedicated by its founder to the Apostle St. Peter, from whom it takes its name. The soil on which it is founded may be said to be marshy, and most of the houses are built on piles. No inconvenience, however, seems to arise from this circumstance, with respect to health or comfort. The surrounding country is flat; the soil is sandy; vegetation is not very luxuriant, except on the smaller islands, and the surface does not present that beautiful variety of ground which forms the charm of the situation of some other cities. But, with all these disadvantages, industry and art have produced, in less than a century and a half, results which in other parts of Europe would have been the work of many successive centuries. The city occupies an area of more than 18 miles in circumference. The population, in 1838, amounted to 469,720, of whom 333,669 were males, and only 136,051 females; a disproportion accounted for by the circumstance, that men brought or coming to the city in search of employment generally leave their families in the interior. The number of Greek clergy was 1867; nobles, 40,588; merchants, both native and foreign, 10,004; citizens of honour, 163; and of various professions, 23,888; citizens, mechanics of various professions, 95,714; military, 70,929; servants of the court, partly serfs and partly freedmen, and individuals privileged with passports of service, 67,001; peasants, in part belonging to the Crown and partly to individuals, 126,313. It contained 10 palaces, 8661 buildings and tenements, of which 3243 of stone or brick, and 5418 of wood. The town markets were supplied with 105,816 oxen, 5610 cows, and 39,965 sheep. The military garrison consists of 60,000 men.

Twenty miles west of the city, on the shore of the Gulf of Finland, is situate the large imperial palace of *Peterhof*, a favourite residence of Peter the Great; 15 miles south is the splendid palace of *Czarskoselo*, the Versailles of Russia, round which has grown up, as if by magic, a large town of 10,000 inhabitants, with colleges and public buildings; and 15 miles further to the south-west, is the palace of *Gatchina*, the favourite residence of the Emperor Paul; and a town of the same name, with a fine china-work and large hospitals. There are other palaces of less importance at *Paulovsky*, *Staelna*, *Tchesmé*, and *Oranienbaum* (orange-trees;) the last of which is situate on the shore of the gulf, to the westward of Peterhof, and is noted, as its name implies, for its superb orangery. *Kronstadt*, or *Cronstadt*, a strong fortress and naval arsenal, and the port of St. Petersburg, is situate at the east end of a large sandy island in the gulf, about 16 miles west from the mouth of the Neva. It is so fortified by every device which skill can suggest, that it is considered to be impregnable; is the station of the Russian Baltic fleet; and completely commands the passage to St. Petersburg, the intervening sea being so shallow that large vessels cannot approach the city. Population, between 30,000 and 40,000.

2. *Esthonia.* — Revel, 14,000; Vesenberg, 2624: Weissenstein, 2716; Hapsal, 1452; Baltisch Port, 497. *Revel* is a fortified town, with a fine harbour, and considerable trade.

3. *Livonia.* — Riga, 50,000; Dorpat, 8568; Pernau, 4450; Venden, 1511; Arensburg, 1459; Valk 570; Volmar, 621. *Riga* is a large, antique, fortified town, with old and bad houses, and exhibits no striking or remarkable feature. Its population is chiefly commercial, and exports great quantities of hemp, corn, and timber, brought from the interior by the Dvina, which forms its harbour. Dorpat is the seat of a celebrated university, founded in 1630, by Gustavus-Adolfus, King of Sweden.

4. *Kürland.* — Mittau, 14,000; Libau, 6877; Goldingen, 3503; Vindau, 1400; Bauske, 1000; Jacobstadt, 2077; Polangen, 1000. *Mittau*, is a literary town, possesses a celebrated gymnasium, a library, observatory, and museum of natural history, and is the seat of the Courlandisch Society, which has published some learned memoirs.

5. *Finland.*—Helsingfors, 10,000; Abo, 12,000: Uleaborg, 5000; Brahestadt, 1100; Tornea, 700; Viburg, 3000; Frederikshamn, 2200; Wilmanstrand, 2000; Kexholm, 500; Tavastehuus, 1600; Biorneberg, 4500; Oasa, 3300; Gamla-Karleby, 1900; Jakobstad, 1400; Sveaborg, 3000. *Helsingfors* is a flourishing commercial town, with a fine harbour on the Gulf of Finland, and is the seat of a university transferred from Abo. It has been recently much improved and fortified by the Russian Government; and near it is the celebrated fortress of *Sveaborg*, consisting of seven fortified islands, which defend a magnificent harbour and naval arsenal. The fortress is capable of lodging a garrison of 12,000 men; is so completely fortified as to be deemed impregnable, and is called by the Russians the Gibraltar of the Baltic. *Abo*, the ancient capital of Finland, was almost entirely destroyed by fire in 1825, and is very slowly recovering. *Tornea*, a very small town at the head of the Gulf of Bothnia; from a mountain in the neighbourhood, the sun is seen all night at midsummer, and on that account, the place is visited by many travellers. *Vasa* and *Uleaborg*, are small but well-built towns, with considerable trade, on the east coast of the Gulf of Bothnia. *Frederikshamn* and *Rotschenalm*, are two fortified places on the northern shore of the Gulf of Finland; the latter is the station of part of the Baltic fleet.

6. *Moscow.*—Moscow, 350,000; Kolomna, 10,000; Serpoukhov, 6500; Versia, 5000; Dmitrov, 4000; Bronnitsi, 2000, Mojaisk, 2000; and Borodino, ——. Moscow (MOSKVA), the metropolis of the

empire, though not the seat of government, is a large city, regularly built on the banks of the Moskva, 390 miles S.E. of St. Petersburg, in 55° 45′ north latitude, and 37° 33′ east longitude. It was almost entirely destroyed by fire in 1812; but, since that time, it has not only been rebuilt, but greatly enlarged, improved, and embellished. In its general appearance it more resembles an Asiatic than a European city; it is chiefly built of wood, and palaces and huts stand mixed together in striking contrast. It is the head-quarters and winter resort of the old Russian nobles, who generally dislike the restraints and the modern fashions of the Court of St. Petersburg; it is also emphatically the city of churches, containing more than 600, many of which have five or six domes, besides steeples, spires, and crosses, gilded and joined together with golden chains. Its convents, too, are almost innumerable, rivalling the churches in size and splendour. In the middle of the city stands the Kremlin, or citadel, on a height, the base of which is circled with white Tartar walls, and washed on one side by the river. It is nearly triangular in form, and two miles in circumference. Within, there are no regular streets; the city contains three open places or squares, and abundance of room for carriages and foot-passengers. It is crowded with palaces, churches, monasteries, arsenals, museums, and other public buildings, erected without any attempt at regularity of design, and exhibiting every variety of taste, and every order of architecture, Grecian, Gothic, Italian, Tartar, and Hindoo, rude, fanciful, grotesque, gorgeous, magnificent, and beautiful; overtopped by upwards of thirty gilt cupolas. The most splendid of the churches is the cathedral of the Assumption, founded in 1328, and rebuilt in 1473, loaded with gorgeous and extravagant ornaments; in this church the Emperors are invested with the ancient crown of the Czars. Above every other object in the Kremlin rises the tower of Ivan Veliki (John the Great), about 270 feet high, and containing 33 bells, the smallest of which weighs 700lb, and the largest more than 124,000 lbs. English; and on festival days the whole are all tolled together. The great bell of Moscow, weighing 443,772 lbs., cast in the reign of the Empress Anne, and which lay for a century sunk in a dark pit, has been recently raised and set upon a pedestal. Though cracked and useless, it is, nevertheless, an object of great veneration with the Russians. Moscow possesses a great number of scientific and literary establishments, and is the centre of an immense inland commerce. The population in 1838 amounted to 348,562; of whom 214,778 were males, and 133,784 females. *Mojnisk* and *Borodino*, 60 miles west of Moscow, were the scene of a very obstinately contested and sanguinary battle between the French and the Russians in 1812.

7. *Smolensk*.—Smolensk, 11,000; Viasma, 8000; Dorogobouj, 4000; Belvi, 3000; Roslavle, 3000; Poretchie, 3000; Krasnoi, 1240. *Smolensk* is an ancient fortified city on the Dnieper, 230 miles W. by S. of Moscow, and 360 south of St. Petersburg. It was burned by the Russians in 1812, and has since been rebuilt of wood. Both Smolensk and Viasma enjoy considerable trade.

8. *Pskov*.—Pskov (German, *Pleskov*), 9000; Toropecz, 5000; Veliki Lûki, 4000; Porkhov, 3000, Izborsk, 300; Optschka, 1895.

9 *Tver*.—Tver (Twer), 22,000; Torjok, 12,000; Riev, 10,000; Ostachkov, 8000; Vishni-Volotchk, 6000; Kaliazine, 5000; Kachin, 5000. *Tver*, an archiepiscopal city, is situate on the right bank of the Volga, at the confluence of the Tvertza and the Tmaka. It was almost entirely rebuilt by Catharine II., and is most advantageously situate for carrying on an extensive trade. It has a magnificent imperial palace, a gothic cathedral, a monument of Catharine II., several fine squares, straight streets, and superb quays along the Volga. It possesses an ecclesiastical seminary with 11 professors, a gymnasium, and a college of nobles.

10. *Novgorod*.—Novgorod-Veliki (Big Novgorod, or Novgorod the Great), 8000; Staraia-Russa, 9000; Borovitchi, 5000; Tikhvine, 4000; Valdai, 4000; Ustiujna, 3000; Belozersk, 3000; Kirilov, 2000. Three centuries ago, Novgorod the Great covered an area 42 miles in circumference, and had more than 400,000 inhabitants. Some parts of it are still in good condition, with wide and well-paved streets; but the larger portion has fallen to ruin, and its population has dwindled to little more than 7000. It is situated about 130 miles from St. Petersburg, on a fine navigable river, the Volkhova, over which there is a new and handsome bridge. *Staraia-Russa* is noted for its tanneries and saltworks.

11. *Olonetz*.—Petrozavodsk, 5000; Kargopole, 2000; Vytegra, 1000; Olonetz, 1000. *Petrozavodsk* (Peter's foundry), situate on the west side of the Lake of Onega, is noted for its large and important iron-works, its cannon-foundry, and gunpowder manufactory. *Olonetz* is a bishop's see, and has some mines of iron and copper in its district.

12. *Arkhangel*.—Arkhangel (or the City of St. Michael the Archangel), 19,000; Mezen, 1000; Onega, 1000; Kolmogory, 1000; Keme, 1000; Kola, 700. *Arkhangel* is situate on the northern bank of the Dvina, near its mouth in the White Sea, is an archiepiscopal city, and was the only outlet for the productions of Russia before the founding of St. Petersburg. It still enjoys a great trade in exporting the productions of the northern provinces, but its harbour is shut up by the ice from September to July. The town is mostly built of wood, but its great market place is built of stone. It has an ecclesiastical seminary, with nine professors; a gymnasium, and a school of navigation.

13. *Vologda*.—Vologda, 13,000; Veliki-Ustiug, 7000; Totma, 3000; Ust-Sysolsk, 2000; Griazovetz, 2000; Solvytchegodsk, 1000; Nikolsk, 1000; Iarensk, 1000. *Vologda* is a flourishing manufacturing town, and the centre of the trade of the north of Russia with Europe and Siberia, an advantage which it owes to its position midway between St. Petersburg, Arkhangel, Moscow, and Kasan, and to the canals and navigable rivers with which it is connected. It is the seat of a bishop, and of one of the principal ecclesiastical seminaries, which has fourteen professors, and is attended by several hundred students. *Totma* has an active commerce with Siberia, saltworks, and the convent of Spaso-Umorine, where numerous pilgrims visit the body of St. Theodosius. *Veliki-Ustiug* is also a flourishing commercial town.

14. *Iaroslav*.—Iaroslav, 28,000; Uglitch, 8000; Romanov-Borisoglebsky, 6000; Rostov, 6000; Mologa, 3000; Rybinsk, 3000; Pochikhonie, 3000; Lubime, 2000. *Iaroslav*, a well-built archiepiscopal city, with many elegant houses, situate on a plateau at the confluence of the Kotorotsk with the Volga, is one of the principal manufacturing towns of Russia, and is particularly noted for table-linen, paper, and silk. It possesses a school of science, founded, in 1812, by Paul Gregoriwitch Demidov, a rich library, an ecclesiastical seminary, with 12 Professors and 1200 students, and 43 or 44 churches.

15. *Kostroma*.—Kostroma, 12,000; Galitch, 5000; Kinechma, 3000; Makarief, 2000; Soligalitch, 2000. *Kostroma* is an episcopal city, with numerous manufactures of linen and copper, salt, &c., and a flourishing trade. It has an ecclesiastical seminary with 8 professors, and a gymnasium.

16. *Vladimir*.—Vladimir, 3000; Murom, 4500; Pereslavl-Zalesky, 3000; Suzdal, 3000; Iuriev-Polsky, 3000; Melenki, 3000; Viazniki, 2000; Alexandrov, 2000; Chuia, 2000.

17. *Nishnei-Novgorod*.—Nishnei-Novgorod, 18,000; Arzamas, 8000; Potchinki, 6000; Balakna, 3000; Madaievsk, 3000; Makariev, 2000; Pavlova, 6000; Murachkina, 6000. *N. Novgorod* (Lower Novgorod), an episcopal city, stands on a fine triangular height, at the confluence of the Volga and the Oka, in 56° 19′ 40″ north lat., and 61° 40′ 34″ east long, and consists of two towns; one on the low bank of the Oka, and the other on the top of the high bank overhanging it, the highest point, overlooking the Volga, is occupied by the Kremlin, or citadel. The public buildings are very elegant, and, with the

whole town, present an appearance of freshness and solidity. It has 26 churches, of great size and beauty; two monasteries, and a nunnery. Upon a low flat, on the north bank of the Oka, exposed to inundation from both rivers, lies a scene of bustle and activity unparalleled in Europe; a vast town of shops, laid out in regular streets, with churches, hospitals, barracks, and theatres, built of the most substantial materials. This place is occupied every year, from the first of July to the first of September, old style, by more than a hundred thousand people, from all parts of Asia and Eastern Europe, to attend the fair of Makarief, which is held here, and the business of which is of such importance, that the governor of the province attends it, residing for the time in a large and handsome palace. The annual official value of goods sold here is stated at 125,000,000 roubles, or £5,000,000 sterling; but the real value is reckoned at double that sum; and, while it lasts, the fair is frequented by two or three hundred thousand people. Every article of commerce, from the heaviest and bulkiest to the smallest and lightest, raw produce as well as manufactured goods, is brought here for sale. The fair derives its name from St. Macarius, under whose protection it is held; and who also gives his name to the place where it was formerly held, a decayed town on the left bank of the Volga, 56 miles below N. Novgorod. The site was changed in 1817.

18. *Tambov.*—Tambov, 16,000; Kozlov, 14,000; Temznikov, 6000; Usmane, 6000; Lipetsk, 6000; Morchansk, 6000; Spask, 6000; Elatma, 5000; Kadom, 4000; Chatsk, 4000.

19. *Riazan.*—Riazan, 10,000; Pkopine, 8000; Zaraisk, 6000; Kaçimov, 4,500; Ranenburg, 3000; Spask, 5000; Dorskov, 1000. *Riazan* is a fine town, with spacious streets and handsome houses. *Kaçimov* is a very ancient city, with a considerable trade in peltry; the remains of a palace and mosque, and other Tartar buildings, and the tomb of the terrible Khan Chagali.

20. *Tula.*—Tula, 39,000; Belev, 5000; Bogoroditsk, 4000; Efremov, 3000; Venev, 3000; Epifane, 2000. *Tula* is finely situate on the banks of the Oopa, 117 miles S. of Moscow, the houses filling a wide hollow, and spreading gently back till they reach two ridges of considerable elevation, which are covered with mansions of imposing appearance. Under the protection of Peter the Great, it became a place of great importance; and, his successors having continued to protect its artizans by every means in their power, it has risen to such a degree of importance, in some kinds of manufacture, as to be considered the Birmingham of the empire. It has been, however, almost ruined by two destructive fires in the reign of the present Emperor. The staple branch of industry is the manufacture of fire-arms. A great part of the iron and steel used is brought from Siberia; but iron of the best quality is also found in the neighbourhood. The soil abounds with ore, and in some places it may be reached by the plough. The mines are conveniently situate, and easily wrought; but, the forests having been consumed, fuel has become so scarce, that the forges are wrought at a very considerable expense. It is, besides, so very disadvantageously situate for communication with the great marts of the empire, that the expense of carriage raises the price of its manufactures above most people's means.—(*Bremner.*)

21. *Kaluga.*—Kaluga, 26,000; Gisdra, 7000; Borovsk, 5000; Kozelsk, 4000; Mestchovsk, 3000; Mosalsk, 3000; Malo-iaroslavetz, 1000.

22. *Orel.*—Orel, 31,000; Eletz, 15,000; Bolkhov, 13,000; Metsensk, 10,000; Karatchev, 9000; Livy, 7000; Sevsk, 6000; Briansk, 5000; Kromy, 4000; Dmitrovsk, 4000; Malo-arkhangelsk, 4000. *Orel* is a flourishing town, where all the provisions necessary for the victualling of Moscow are collected from Little Russia, such as grain, tallow, cattle, pigs, leather, honey, wax, wool; besides the corn and hemp sent to St. Petersburg for the navy. *Briansk* has an extensive manufacture of arms, a cannon foundry, an arsenal, and magnificent forests of excellent timber for ship-building, which are under the superintendance of the admiralty.

23. *Kursk.*—Kursk, 32,000; Belogorod, 10,000; Suja, 7000; Rylsk, 7000; Putivil, 6000; Miropolie, 5000; Novoi-Oskole, 5000; Stehigry, 5000; Staroi-Oskole, 5000; Oboiane, 4000. *Kursk* is a fine episcopal city, occupying a broad valley, and climbing beautifully up the receding slopes of a circle of heights, which are intermixed with orchards and gardens. It is famous for its fine fruit, such as apples, pears, and prunes. In its district is the convent of *Korenaia*, celebrated for a miraculous image of the Virgin, which attracts great numbers of pilgrims. It is also the seat of one of the principal fairs.

24. *Voroneje.*—Voroneje (*Voronecz, Voronetz, Voronesch*), 19,000; Ostrogojsk, 4000; Novokhopersk, 2000; Pavlovsk, 3000; Mikailovka, Valuiki, 3000; Biruch, 2000.

25. *Kief.*—Kief, 56,000; Bugoslavl, 7000; Uman, 7000; Tcherkacy, 6000; Vasilkov, 5000; Makhnovka, 5000; Skvira, 4000. *Kief* (*Kiev, Kiew, Kioff, Kiow, Chioff, Chiow*—the English sound, we believe, is *Kee-oo* or *Kee-ou*), the ancient capital of the original Russia, is a large town on the right bank of the Dnieper, situate to the west of an amphitheatre of hills, which rise abruptly in the middle of an immense plain. For a long time it was the prey alternately of Poles, Lithuanians, and Tartars, until, in 1686, it was finally ceded by the Poles to Russia. For many centuries it has been regarded as the Jerusalem of the North, the sacred and holy city of the Russians; and its numerous convents and churches, which crown the summit, and hang on the sides of the hills, with their domes and spires, chains and crosses, richly gilt, give the whole city a golden splendour. In the monastery of Petcherskoi are preserved 110 dried bodies of martyrs, which are visited by crowds of pilgrims from all parts of Russia. Kief is the seat of a university, and of an annual fair, frequented by about 30,000 persons, and which was formerly held at Dubno.

26. *Tchernigov.*—Tchernigov, 10,000; Nechin, 16,000; Novgorod Severski, 8000; Glukhov, 9000; Starodub, 4000; Mglin, 5000; Batourin, 5000; Oster, 4000.

27. *Poltava.*—Poltava, 8000; Kobeliaki, 11,000; Krementchug, 8000; Mirgorod, 7000; Zenkov, 7000; Priluki, 6000; Gradijsk, 5000; Pereislavl, 5000; Lokhvitsa, 4000; Zolotronecha, 4. Gadiatch, 3. Romeue, 3, Khorole, 3. Glinsk, 2. Lubny, 2. *Poltava* or *Pultava* is a small episcopal city, chiefly noted for the great battle fought in its neighbourhood between the Czar Peter the Great, and King Charles XII. of Sweden. The scene of action, now covered with rich corn fields, is a plain about 4 miles south-west of the town, and is marked by an artificial hillock, rising not more than 30 feet from the ground, with a large white cross on the top, bearing this inscription: "Here are interred the Swedes who fell in the great day of Poltava." The town stands on a lofty height, visible 20 miles.

28. *Kharkov*, or *Slobodes of the Ukraine.*—Kharkov, 13,000; Akhtyrka, 13,000; Belopolie, 11,000; Lebedine, 11,000; Sounmy, 9000; Bogodoukhov, 9000; Valki, 7000; Tsume, 6000. Belovodsk, 6000; Krasnokontsk, 5000; Valtchansk, 5000; Nedrigailov, 5000; Slaviansk, 4000. *Kharkov* or *Kharkoff*, a flourishing commercial town, the seat of a university, and an ecclesiastical seminary. Several large fairs are held here annually.

29. *Iekaterinoslav.*—*Iekaterinoslav*, 8000; Nakhitchvan, 9000; Novomoskovsk, 7000; Taganrog, 6000; Rostov, 5000; Paulograd, 4000; Bakhmont, 4000; Mariopol, 4000; Lugone, 3000; Slavenosebsk (formerly Donetz), 1000; Azov, 900. *Taganrog* is a considerable trading town on the Sea of Azov, near the mouth of the Don; but its commerce is greatly impeded, not only by the shallowness of the Don and the sea, which, it is said, may even be crossed at times on foot opposite Taganrog, but also by the ice, which continues from December to March, and closes the passage even of the Strait of Jenikaleh.

30. *Khersón.*—Kherson, 12,000; Odessa, 60,000; Elizavetgrad, 10,000; Nikolaef, 6000; Tiraspol, 5000; Berislavl, 3000; Krilov, 3000; Olviopol, 3000; Otchakov, 2000; Ovidiopol, 2000. *Kherson* is a small town, with a fortress and a harbour, at the mouth of the Dnieper. *Odessa* is situate on the north-western coast of the Black Sea, overhanging a wide and beautiful bay. Its principal portion extends along the top of a long range of cliffs commanding an extensive sea view. Immediately on the top of the cliff is an extensive public walk, planted with flowering shrubs and trees, and having the governor's house at one end, the Exchange at the other, and a statue of the Duc de Richlieu in an open area in the centre. One side of this walk is formed by a line of splendid houses, the residences of the principal inhabitants; and behind it are rows of parallel streets crossing each other at right angles. The houses in the best quarters are very lofty and handsome, generally built of a soft light-coloured limestone, and roofed with sheets of iron or painted wood. The want of good building and paving-stone is much felt; but considerable quantities are imported from Greece, Malta, and other places as ballast. The streets, consequently, are not paved. In 1796, the Empress Catherine resolved to build a city here, and it soon became a great resort for foreign traders. In 1802 the Duc de Richlieu, the governor, laid out the plan of a city on a gigantic scale, which already bids fair to realize the expectations of its founder. The inhabitants consist chiefly of Polish Jews, Italians, Greeks, and Germans, with a few French and English. Grain constitutes the most important branch of trade, the quantity exported every year being seldom less than a million of chetverts (each 0.68 of an English bushel.) Wool is also fast rising into importance. The greater part of the carrying trade is performed in Austrian ships; next to which in order are those of Sardinia, Russia, England, Greece, Turkey, Sweden, France, &c. The road is spacious and good, but open from north-east to south-east, with a bottom of mud and gravel; and when the mitel (north-easterly wind) blows, the shipping suffer greatly; vessels often start their anchors, and twelve or fourteen wrecks have been seen lying together on the shore.' The winter, though sometimes severe, is generally very open; the trade is seldom interrupted by the frost for more than six or eight weeks; but such is their dread of the mitel, that when it blows no one ventures out of doors (ante page 508.) The thermometer rarely falls below 18° Fahrenheit. In summer, on the contrary, the heat is very intense, the thermometer often rising to 95°. The greatest annoyance during the warm weather proceeds from the clouds of dust which are raised by the slightest breath of air, even by the wheels of a carriage passing along the street. Odessa is a free port, but the limits of the privileged district are strictly guarded. It also contains a very important academic institution, the Richlieu Lyceum, which contains professors of Greek, Natural and Civil History, and the higher branches of science. Odessa is one of the cheapest towns in Europe to live in. *Elizavetgrad* is a fortified town, with an arsenal and magazines. *Nikolaef* or *Nikolaïef*, on the Dnieper, was once the great arsenal and building station of the Black Sea fleet; but has decayed rapidly since the removal of the naval station to Sebastopol. From 30,000, its population has fallen to 8000, or, as M. Babli says, 6000.

31. *Taurida.*—Simpheropol, 2000; Bakhtcheseral, 9000; Kara-su-bazar, 8000; Eupatoria, 7000; Theodosia or Kaffa, 6000; Orekhov, 4000; Perekop, 3000; Kertch, 2000; Sebastopol, 30,000; Ienikaleh, 600; Ekaterinodar, 3000; Taman, &c.—The principal part of Taurida consists of the renowned peninsula of the Crimea (the ancient Tauric Chersonese), which is of an irregular square form, measuring diagonally 150 miles from east to west, and 123 from north to south. It is situate between the Black Sea and the Sea of Azov, and connected with the mainland by the Isthmus of Perekop, which is 5 miles in breadth. The south-eastern coast is occupied by a range of mountains, which extend from the Strait of Ienikaleh to Cape Khersonese, the highest of which, *Chatir-d-agh*, rises to 790 toises (5051 feet) above the level of the sea. The coast of this mountainous region is very picturesque, and great part of it has been laid out in vineyards; but though they have the advantage of a fine exposure and a good climate, the produce does not remunerate the labour of the vine-dresser; nor is the wine remarkable for either flavour or strength. It also produces garden fruits excellent of their kind, particularly apples, which are so highly esteemed, as to form an article of commerce as far as Moscow. The northern part of the peninsula, however, sinks into a boundless level steppe, with soil of a dark putrid loam, hard and smooth as a bowling-green, with brackish water, and without either springs or rivers, though the beds of rivers which once existed may still be traced. The soil is impregnated with saline matter; but wherever it is capable of vegetation, the surface is covered with plants, whose gaudy blossoms fill the air with refreshing fragrance. The climate has materially changed for the worse of late years; and fevers are so frequent in every part of the peninsula, that it is almost impossible for a stranger to avoid them. In summer, the thermometer sometimes rises to 100° in the steppe; long droughts constantly prevail; trees of every kind are of inferior size and beauty, and, if planted in the steppe, they altogether perish, after a brief existence of a year or two. The most valuable product is salt, which is derived from the lakes near Perekop, Kaffa, Koslov, and Kertch. Salt is a government monopoly, and yields a considerable revenue. In 1833, the different lakes produced the immense quantity of 242,000 tons; about 13,000 men are employed in the works. The principal other articles of export are wine, honey, wax, leather, hides, wool, and lamb skins. The only manufacture worth notice is that of Morocco leather. The population consists of Tartars, Russians, Greeks, Germans, Jews, Armenians, and Gipseys; all of whom preserve their peculiar customs and religion distinct. The Tartars form the bulk of the population, consisting of *Nogays*, who live in villages, and pique themselves upon the purity of their lineage; and Tartars of the steppe, who are of less pure descent; and the Tartars of the south coast, who are a mixed race, largely alloyed with Greek and Ottoman blood; and despised on that account by the two former races. They are all Mahommedans, and Simpheropol is the seat of one of the two Muftis of the Russian empire. They are divided into mirzas or nobles, mollahs or priests, and peasants. The noble families are only about 250 in number; but there is a mollah for every parish. The Tartars are simple in their manners and dress, and live principally on the produce of their flocks and herds. Their character has been highly eulogized for sobriety, chastity, cleanliness, and hospitality; but they are not much disposed to regular industry, preferring the pastoral to the agricultural life; so much so, that even in the best years, a large quantity of corn has to be imported for the supply of the inhabitants. During the present century the Russian Government has endeavoured to improve their condition, by planting among them industrious colonists from Germany and elsewhere. SIMPHEROPOL, the capital, is a considerable city, with fine squares, wide streets, elegant houses, and all the public establishments requisite to conduct the affairs of an extensive province. The Tartar part of the city, named *Ak-metchet* (White Mosque or Church), is a small town with narrow unpaved streets, surrounded with old dilapidated walls. *Bakhtcheserai* or *Bagtcheserai* (Garden Palace), a large Tartar city, containing the fine palace and mausoleum of the Khans of the Crimea, in a highly romantic situation. The whole trade of the town is in the hands of the Karaite Jews, who possess a stronghold of their own, named Jufeid Kaleh (Infidels or Rogues Castle), on a high rock, where they and their families live in security, and are governed by their own laws. *Sebastopol*, near the south-western point of the peninsula, upon the south side of a fine bay, is a strongly fortified town with a fine citadel, and a roadstead so capacious, and with such good anchoring ground, that the fleets of Europe might ride in it, secure from every storm; and, such is the depth of water, that the largest ships may lie within a cable's length of the shore. There are, besides, five other small bays branching off in various directions, all equally commodious, and all lined with a series of capes naturally strong and easily defended. It is now the station of the Black Sea fleet, and no expense or labour is spared to make the place impregnable. The population, of 35,000, are mostly all naval or

military. *Balaclava (Bell's chiave)*, 10 miles S.E. of Sebastopol, is a small town deriving its name from its fine harbour, which enters from the Black Sea by a narrow strait only 30 yards across, and then expands into a basin 1200 or 1400 feet wide, and 300 fathoms deep, where large vessels may ride in safety during the severest storms. *Eupatoria* or *Kazlov*, on the west coast, is a Tartar city, inhabited almost exclusively by Crim Tatars, with a lazaretto, custom-house, several fine mosques, and a Tartar college. The great mosque, built in 1152, is the finest building in the Crimea, and much admired for elegance, extent, and solidity. The bay being open and exposed, the maritime commerce of the city is very inconsiderable. About 17 versts from Eupatoria is a famous salt lake with mud baths, which enjoy a high reputation, and attract invalids from every part of the empire. *Kaffa* is an ancient but decayed city on the south-east coast, with a fine well-sheltered bay. *Kertch*, on the Strait of Ienikaleh, is the most bustling seaport of the Crimea, and, from its situation, is remarkably well adapted for a commercial station. It has regular streets and good houses. *Intta* or *Y ltz*, 70 miles S.W. of Kaffa, is a small place, with well-built houses, streets prettily laid out, and an air of commercial improvement everywhere visible; and from the security of its harbour, and other advantages, it has every chance of becoming a prosperous town. *Kara-ni-bazar* (Black water Market), is an ill-built, but busy commercial inland town, between Simpheropol and Kaffa. Near Sebastopol is the ancient *Chersonesus*; the site of the famous temple of the Tauric Artemis, where shipwrecked strangers were offered in sacrifice to the goddess; and *Mangoup Kaleh*, one of the most remarkable objects to be found in any country. This is a castle situate on a mountain inaccessibly precipitous, perfectly isolated, and surmounted with extensive fortifications. The rock, moreover, has been cut into a variety of chambers, watch-towers, &c. affording a secure retreat for a garrison of several thousand men. It was the work of the ancient Greeks and the Genoese, but is now deserted. *Ienikaleh* (New Castle), is a fortress which commands the entrance to the Sea of Azov.

32. *Bessarabia.* — Kichinev, 20,000; Akerman, 13,000; Khotim, or Choczim, 7000; Belzi, 7000; Bender, 5000; Kilia, 900; Ismail. *Ismail* is celebrated for its siege and capture by the Russians, under Suvaroff, in 1789. It was then a strong Turkish fortress, on the north bank of the Danube, with 30,000 inhabitants, but has dwindled down to a town scarcely worth notice. *Bender* is noted as the place where Charles XII., King of Sweden, resided for seven years, after the battle of Poltava.

33. *Country of the Don Cossacks.* — This government extends along the Don to the north-eastward of the Sea of Azov, and seems to have been acquired by its present inhabitants, a branch of the Little Russians, in the 16th century. It is an immense plain, destitute of hills; some parts of it are fruitful; but, in general, the soil is barren; agriculture is neglected, and little progress has been made in the useful arts. The Cossacks used to enjoy a great degree of political liberty, under a democratic government, at the head of which is an Ataman or Hetman. They are liable in military service to the Czar, and are particularly useful as light horse, and in irregular warfare. The only town worth notice in their country is *Tcherkask*, which is built upon piles in a marsh; and contains about 3000 houses, which the inhabitants are unwilling to leave for the new town of *Novo-Tcherkask*, more recently built in a healthier situation.

34. *Vilna.* — Vilna, 56,000; Kowno, 6000; Smogornie, 1000; Vilkomir, 4000; Vidzy, 2000; Rossieny 2000; Chavli, 2000; Telcha, 2000; Troki, 1000; Jouburg; Keydani. *Vilna*, or *Wilna*, 430 miles S.W. by S. of St. Petersburg, and 200 E. of Königsberg, is a large and neat town, at the confluence of the Villa and the Vilenka, and surrounded by picturesque hills. It is the ancient capital of Lithuania, and was for many years the seat of a flourishing university, which has been recently reduced to two chairs, one of medicine and the other of theology, and stripped of its rich endowments, libraries, and museums. Its cathedral of St. Stanislas is one of the finest churches in Poland, and occupies the site of the temple of Perkunas, the Jupiter of the Lithuanians.

35. *Grodno.* — Grodno, 9000; Brzesc-Litowski, 8000; Slonin, 4000; Volkoviak, 2000; Lida, 2000; Novogrodeck, 2000; Kobrin, 2000.

36. *Vitepsk.* — Vitepsk, 15,000, the greater part of whom are Jews: Polotsk, 10,000; Velige, 7000; Nevele, 3500; Lutzine, 3000; Dunaburg, 2000; Regitsa, 2000; Lepel, 1000.

37. *Mohilev.* — Mohilev, 21,000; Mtislav, 4000; Bikhov, 4000; Tchaucy, 3000; Tcherikov, 2000; Rogatchev, 2000; Belitsa, 2000; Orcha, 2000. *Mohilev* is a place of considerable trade, but is chiefly noted as the see of an archbishop, who is the primate of the Roman Catholic Church in Russia.

38. *Minsk.* — Minsk, 15,000; Bobruisk, 5000; Slutsk, 5000; Pinsk, 4000; Nesvige, 4000; Disna, 3000; Druia, 3000; Mozyre, 3000; Borisov, 3000.

39. *Volhynia.* — Jitomir, 11,000; Bertitchev, 20,000; Staro-Constantinov, 9000; Dubno, 9000; Zaslavl, 8000; Ostrog, 8000; Kremenetz, 6000; Lutsk, 5000; Radzivilov, 5000; Wlodzimierz (Vladimir), 4000; Novgorod-Volhynsk, 4000; Rovno, 4000; Kovel, 4000.

40. *Podolia.* — Kamenecz-Podolski (Kaminiec) 13,000; Mohilev, 8000; Tultchine, 8000; Vinnitza, 7000; Balta, 7000; Bar, 6000; Khmelnik, 4000; Litine, 3000; Bratzlav, 3000.

41. *Bialystock.* — Bialystock, 6000; Bielsk, 2000; Sokolka, 2000; Gousondze, 1000.

42. *Kazan.* — Kazan, 48,000; Tchistopol, 6000; Tcheboksary, 4000; Kozmodemiansk, 4000; Mamadych, 4000; Laichef, 3000; Jadrine, 2000; Siliarsk, 2000. *Kazan*, or *Kasan*, 760 miles S.E. by E. of St. Petersburg, is a large well-built city, the greater part being situate upon rising ground, not far from the Volga. It is the principal entrepot of the trade of Siberia, and the seat of considerable manufactures. It is the see of an archbishop; possesses one of the four great ecclesiastical academies of the empire, with 16 professors, and about a thousand students; a university, and several other literary and scientific establishments. Kazan was formerly the capital of an independent Turkish or Tartar kingdom, conquered by the Czars in the sixteenth century; and the Tartars still form a considerable, and not the least industrious part of its population.

43. *Viatka.* — Viatka, 9000; Jjevski-Zavod, 12,000; Sarapul, 4000; Slobodskoi, 4000; Elabuga, 4000; Orlov, 3000; Malmych, 3000; Nolinsk, 2000; Yaransk, 2000.

44. *Perm.* — Perm, 10,000; Iekaterinburg, 11,000; Verk-Isseisk; Kungom, 8000; Solikamsk, 2000; Verkhoturia, 2000; Nijni-Tajilsk, 10,000. *Perm* is a small episcopal city, with a gymnasium and an ecclesiastical seminary. *Solikamsk*, a small town, noted for its rich salt mines, its peltry trade, and a botanic garden. *Iakaterinburg* is situate on the east side of the Urals, in Asia.

45. *Simbirsk.* — Simbirsk, 13,000; Syzran, 9000; Samara, 6000; Karsume, 4000; Alatyr, 4000; ropol, 2000.

46. *Penza.* — Penza, 13,000; Saransk, 8000; Kerensk, 6000; Troitsk, 4000. *Penza* is an episcopal city, with an ecclesiastical seminary and gymnasium, soap and leather works. *Saransk* is situate in a fertile territory, and noted for its tanneries. *Kerensk*, noted for sail-cloth. *Iste*, noted for its carpets, and a great imperial manufactory of tapestry. *Mokchane* and *Nijnei Somor* are places of considerable trade; and the latter has a well frequented annual fair.

47. *Astrakhan.* — Astrakhan, 40,000; Krasnoi-iar, 3000; Tchernoi-iar, 3000; Enotaieusk, 1000. *As-*

trakhan, formerly the capital of a Tartar kingdom, is built on an island in the Volga, by which it is accessible for vessels from the Caspian Sea. The houses are almost all built of wood, and the streets are irregular, dirty, and unpaved; but its numerous churches, fine orchards and vineyards, its extensive suburbs, and its kremlin or citadel, give it a fine appearance at a little distance. It is the see of a Russian and of an Armenian archbishop, and contains a board of admiralty, which superintends all the shipyards and fisheries on the river and its shores. Favoured by its situation, which enables it to communicate with the richest and most fertile parts of the empire, and with the shores of the Caspian Sea, Astrakhan has become the entrepot of the trade carried on by the Russians with Persia, Turkestan, and India. The citizens are also distinguished for their industry; of which the manufacture of cotton stuffs, silk, morocco, chagrin, tallow, and dyeing, are the principal branches. It has an ecclesiastical seminary, a gymnasium, and a botanic garden.

48. *Saratov.*—Saratov, 35,000; Volgsk, 11,000; Kusnetz, 7000; Petrovsk, 5000; Khvalynsk, 4000; Tzaritzin, 4000; Sarepta, 3000. *Saratov* is a regularly built town, on the right bank of the Volga. The industry of its inhabitants, and their flourishing trade, have raised it rapidly to its present rank among the principal cities of Russia. It possesses a gymnasium, and some buildings very remarkable for this part of the world. *Volgsk*, a large town on the Volga, with tanneries, brickworks, and a large manufactory of arms. *Tzaritzin* possesses the most frequented mineral waters in the empire, and its fortifications have been lately reconstructed. *Sarepta*, a small but very flourishing town, on a branch of the Volga, near Tzaritzin, established by the Moravian brethren, and the most important of the numerous German colonies in this part of the empire. In this government is situate the salt lake of *Jelton*, or *Yelton*, from which a great quantity of salt is annually produced, nearly 100 miles N.E. of Tzaritzin; and *Sarai*, the ancient capital of the Tartar dynasty of the Golden Horde, whose powerful monarchs acted an important part in the middle ages, extending their terrible sway from the Ural to the Danube.

49. *Orenburg.*—Orenburg, 6000; Ufa, 8000; Troitsk, 2000; Uralsk, 11,000. *Orenburg* is a fine, well fortified town, the entrepot of the trade with Bokhara. It possesses an ecclesiastical seminary, with 8 professors, and a seminary for the army, with 11. *Troitsk*, a fortified town, which also shares in the trade with Bokhara. *Zlatoust*, a large village, with iron forges and gold mines recently discovered. *Miask*, a village, with copper mines, and gold-washings, which, between 1823 and 1838, produced 250 lbs. of gold. *Menzilinsk*, a small well-built town, with a flourishing trade. *Iletsk*, a small fortified town, with a rich mine of rock salt, considered to be the best in Russia. It contains also, since 1817, a number of smiths, jewellers, watchmakers, and other artizans, who carry their work to great perfection. *Uralsk*, the capital of the Cossacks of the Ural, is a large town, chiefly dependent upon the produce of the fisheries, the value of which is about £160,000 a-year. *Ufa* is an episcopal city, the residence of the bishop of Orenburg.

50. *Poland.*—Warsaw, 150,000; Kalisch, 15,000; Kielce, 5000; Sandomir, 2000; Lublin, 12,000; Zamosz, 5000; Siedlek, 3000; Plock, 6000; Pultusk, 3000; Ostrolenka, 1000; Sowalki, 3000; Augustovo, 1000. Warsaw (*Warszawa* of the Poles, *Warschau* of the Germans) is situate on the left bank of the Vistula, 170 miles S.E. by S. of Danzig, in the middle of a vast sandy plain. The city proper is ill built; but the suburbs are fine and spacious, with wide, straight, and well-paved streets. *Praga*, the largest suburb, is situate on the right bank of the river, across which there is a bridge of boats. The royal palace, Zamek Krolewski, is a vast building; and, besides it, there is a great number of other fine palaces and public buildings; a cathedral, dedicated to St. John, and numerous other churches, with many scientific and literary establishments. In the immediate neighbourhood of the city is the superb castle of *Villanow*, which belonged to the great king John Sobieski, and where he died in 1696. *Kalisch* is one of the finest cities in Poland. It has important cloth-works, a military school, a lyceum, with a valuable library and museum, and a Catholic bishop. *Czenstokhowa*, near Kalisch, is a small town, with a sanctuary of the Virgin Mary, which is visited every year by a crowd of pilgrims. *Lublin*, a large episcopal city, with some fine buildings, and a considerable trade. *Pulawy*, near Lublin, was noted for the magnificent residence of the princes Czartoryski, who spent a great part of their revenues in rendering it one of the finest places in Europe; but it was sacked and burned in the late war. *Ostrolenka*, a small town on the Narew, 65 miles N.N.E. of Warsaw, where a great battle was fought between the Russians and the Poles, in the late revolutionary war. *Zamosz*, a small fortified town, built in the Italian style, in the midst of extensive plains.

The Kingdom of Poland formerly included a very large territory, extending from the eastern frontier of Germany to the borders of Muscovy, about 700 miles, and from the shores of the Baltic to the Carpathian mountains and the river Dniester, on the borders of Turkey. The Polanè, a Slavonic people (so called from their fertile plains), early acquired a certain degree of celebrity, and established the centre of their power, first at Kruswitza (A. D. 846), then at Gnesen, and latterly at Cracow. Christianity was introduced among them by their King Mieczislaus I. in 965; but his son, Boleslaus the Great, deserves more properly to be considered the true founder of the Polish monarchy, the limits of which he extended from the Dnieper to the Elbe, and from the Baltic to the Danube and the Theiss. While all the other Slavonic nations were subjugated by Turks or Tartars, Magyars, Greeks or Germans, the Poles preserved their independence, and long stood forth as the advance guard of Europe against the Infidels. The kingdom was at last so completely disorganised by its feudal aristocracy and elected king, that its neighbours took advantage of its weakness, produced by dissension and anarchy, to divide it among themselves. The first dismemberment took place in 1766, and the second in 1792, when the Polish territory was finally divided among the Empress of Russia, the Emperor of Germany, and the King of Prussia. During the wars of the French Revolution, various changes took place in the arrangement and boundaries of their respective divisions; but they were settled at last on their present footing in 1815; nearly two-thirds of the kingdom being then confirmed to Russia. *Cracow*, the ancient capital, was declared a free city, under the protection, or to speak correctly, under the domination of the three Sovereigns: and can hardly be said to preserve even its nominal independence. The Poles of the present day call themselves *Polak*, in the plural *Polacy* (Polatzy), and their country *Polska*.

Cracow is situate on the left bank of the Vistula, 140 miles S.S.W. of Warsaw, in a fine valley; with a number of fine buildings, but narrow, irregular, and ill-paved streets. Its cathedral, regarded as the finest and most interesting church in Poland, contains the tombs of the kings and great men of Poland, from Boleslaus the Frisian, and Casimir the Just, to Joseph Poniatowski and Thaddeus Kosciusko. The ancient royal castle was for some time occupied as barracks, and is now possessed in part by a benevolent society; and the bishop's palace is now the finest in the city. The University is one of the most ancient in Europe, and possesses a rich library and a botanic garden. Population about 25,000. Cracow communicates with its suburb of Podgorze, in Galicia, by a bridge across the Vistula. The legislative power is vested in an assembly of deputies chosen by the communes, and the executive in a senate, consisting of twelve members and a president, who is the chief of the republic, and is elected every two years.

SPANISH PENINSULA.*

(*España.*)

THOUGH this Peninsula contains two perfectly distinct and independent kingdoms, it forms only one geographical region, the description of which cannot well be separated according to the political divisions. We shall, therefore, as in the case of Scandinavia, first describe the natural features of the whole Peninsula, and then divide the remainder of our account into the two sections of *Spain* and *Portugal*.

ASTRONOMICAL POSITION. — Between 36° and 44° north latitude, and beween 4° east, and 10° west longitude.

DIMENSIONS. — The longest straight line which can be drawn on the map of the Peninsula, extends diagonally from Cape St. Vincent, in the south-west, to Cape Creuse, in the north-east, a distance of 720 miles. From the point of Tarifa, on the Strait of Gibraltar, almost due north to Cabo de Peñas, on the coast of Asturias, the distance is about 530 miles; but measured diagonally, from Cape de Gata, on the Mediterranean, to Cape Ortegal, in Galicia, the length is about 560 miles. The greatest breadth from east to west is from Cape Finisterre in Galicia to Cape Creuse in Cataluña, a distance of 630 miles; but in the middle region, from the Rock of Lisbon to Cape la Nao, in Valencia, it is only 500 miles; and at the narrowest point, along the 40° parallel, about 450. The superficial area is computed at 216,061 square English miles, of which 179,465 belong to Spain, and 36,596 to Portugal.

BOUNDARIES. — *Northern:* — The Bay of Biscay and the Pyrenees. *Southern:* — The Atlantic Ocean, Strait of Gibraltar, and Mediterranean Sea. *Eastern:* — The Mediterranean Sea. *Western:* — The Atlantic Ocean.

GENERAL ASPECT. — The country forms a large and very compact Peninsula, lying at the south-western extremity of Europe, with the continent of which it is connected by an isthmus 230 miles broad. The interior may be considered as one vast mountain; for, though it consists chiefly of plains, these form a table-land from 1800 to 2600 feet above the level of the sea, which is traversed by numerous mountains. Around this central nucleus extends a narrow belt of maritime lowland, sloping gradually towards the sea, and broken into an alternation of mountains and valleys, which produce a most agreeable variety of aspect, and present a pleasing contrast to the bleak and barren sameness by which the central region is characterized.

Spain may indeed be considered as a series of mountain terraces which, projecting successively their rugged edges towards the south, present a flight of gigantic steps from the Pyrenees to the Mediterranean Sea and the Ocean. The Pyrenees themselves, which form the boundary between France and Spain, extend across the isthmus, in a general direction from S.E. to N.W. They rise abruptly from the Mediterranean Sea at Cape Creuse, and soon reach an elevation of 1600 to 2000 feet, which they maintain to the *col of Pertus*, the great pass into Spain by Perpignan, which is practicable at all seasons, and with all kinds of carriages. Further west, the height of the chain increases considerably, but its general features are of a softened character, the mountains rising in rounded forms, and terminating in broad plateaus. The *cols* or passes likewise, instead of rocky defiles, present plains or shallow ravines, which afford the means of easy communication between Roussillon and Cataluña. At Cambredasay, however, to the south of Mont Louis, the range suddenly assumes a character of rugged magnificence; and the hills of the Alberes change into craggy and sharp-pointed peaks, forming precipitous masses of rock, of difficult access, and almost impossible to cross. The crest of the principal chain soon after attains the height of 9000 feet, but sinks again to about 7000, at the great bend, near the source of the Garonne, beyond which the steep-

* Many Spanish names are spelled indifferently with *x* or *j*, both of which are pronounced as strong gutturals, without the slightest resemblance to the sound of the same letters in English. The nearest approach that can be made to their sound in English, is that of a strongly aspirated *h*. The double consonant *ch* is invariably pronounced as in the English words *chair, cheese, child, choke, church*, and never like *sh* or *k*, as in French and Italian. Double *ll* and ñ with a dash, or, as the Spaniards call it, *n con tilde*, are pronounced like *ly* and *ny* before a vowel, or as the Italian *gl* and *gn*. *Qui* is pronounced as *Kee*. *Examples.*—Mexico or Mejico, Ximena or Jimena, Xucar or Jucar, Loxa or Loja, Xeres or Jeres, Xenil or Jenil, Anduxar or Andujar, Guadalaxara or Guadalajara, Truxillo or Trujillo, Don Quixote or Quijote de la Mancha, Coruña, Cataluña, Quito, Coquimbo; pronounced—Mehico, Himena, Hucar, Loha, Heres, Henil, Anduhar, Guadalahara, Truhilyo, Don Keehotty de la Mantsha, Corunya, Catalunya, Keeto, Cokeembo.

In Portuguese names *ch* and *x* are pronounced as *sh*; *lh* and *nh* represent the Spanish *ll* and ñ con tilde, or ly, ny; *Que* or *Qui* are pronounced as *Kee*; *j* before a vowel as in English, and in other circumstances as *ee*.

ness becomes more remarkable, and the crest rises more precipitously into sharp and lofty peaks. This is the region of the Central or High Pyrenees, the mean height of which is about 8312 feet, though several of the peaks rise 2000 or nearly 3000 feet higher; the detached summits of Maladetta, and Mont Perdu, exceed 11,000 feet. The *cols* or *ports* in this region are numerous; the most celebrated being the *Portillon d' Oo*, the *Port d' Oo*, and the *Breche de Roland*; the last of which consists of a gap 300 feet wide, cut through a wall of rocks rising from 300 to 600 feet in height. Further west the chain gradually becomes lower as it approaches the Atlantic; instead of a precipitous crest surrounded by deep abysses, the mountains assume a milder form, presenting a series of circular and undulating summits of easy access, covered with pasturage, and sometimes intersected by torrents; while the small elevation of the chain, and the cols or passes afford a multitude of communications between the adjoining countries. The Pyrenees terminate in a long point or promontory, which strikes into the sea on the south side of the Bay of Figueras, at the mouth of the Bidassoa. On both sides the Pyrenees throw off numerous branches, which gradually subside into the plains; they have also in different places parallel chains, though not of great extent, which in position approach nearer to the roots of the mountains than their elevated ridges. The valleys of the Pyrenees are not only numerous, but of a singular conformation. All the great valleys are transversal; commencing at a col in the crest, and extending at right angles with the direction of the chain. There are also longitudinal valleys formed by the parallel chains, but these are of small extent, and oftener partake of the character of gorges or ravines than of valleys. The valleys consist generally of a series of basins, with contracted necks of communication between them, and are traversed by rivers, some of which in the higher regions form, or originate in, small lakes. These lakes, when they occur at a great elevation, within the limits of perpetual snow, and are sheltered from the rays of the sun and the hot winds, are always covered with ice; and some of those, in lower situations, where they are more exposed, continue frozen till the end of August. The southern face of the central chain is more rugged and precipitous than the other, so that access from the side of Spain is generally more difficult and laborious than on the side of France; and the French valleys ascend to the crest of the chain by a tolerably easy and gradual rise, or rather by steps more or less lofty, an arrangement which is not so marked on the Spanish side; but it is a question yet undecided whether the inclination of the northern or of the southern face of the chain be the more precipitous.

Some distance before the Pyrenees terminate at the point of Figueras, a branch strikes off to the westward, and extends in a direction parallel to the coast of the Bay of Biscay to the Capes Ortegal and Finisterre; so that in fact the mountains which reach the ocean near Bayonne, and are usually considered as the western termination of the Pyrenees, are only the termination of a lateral branch which leaves the main chain at the head of the valley of Bastan; while the mountains of Asturias and Galicia may be considered as properly the main chain itself. In like manner, the eastern extremity, which reaches to the Mediterranean, is but another lateral branch, which leaves the main chain at the head of the valley of Teta, and passes through French Cerdagne; while the principal chain extends northward in the direction of the Cevennes. The western prolongation forms a single chain with short offsets, as far as the 6° W.; but, beyond that point, it divides into several ranges, which terminate respectively at Capes Ortegal, Finisterre, and Silleiro. The eastern portion of this chain attains the height of 4000 or 5000 feet, the western portion rises a thousand feet higher.

To the south of this long line of mountains extend the table lands of Spain, the greater part of which consists of a series of river basins divided by parallel ranges of mountains, and having a somewhat gradual slope westward to the Atlantic Ocean. The watershed between these basins and those which have an inclination towards the Mediterranean Sea, consists of a long line of high ground, nowhere forming a continuous chain of mountains, in a direction from south to north, but seeming rather to consist of the terminations and diverging offsets of the parallel chains which extend from east to west. To the eastward of the watershed a narrow belt of country, intersected by short rivers, extends to the Mediterranean Sea, except in the north-east, where the basin of the Ebro penetrates across half the breadth of the Peninsula. Of the chains which range across the Peninsula, that which rises to the west of the source of the Ebro, called Idubeda by the Romans, extends in a south-eastern and southernly direction, forming the watershed between the affluents of the Ebro, and those of the Tagus and the Duero, till it becomes connected, on the borders of Castille and Aragon, with the mountains of Teruel and Castille, where it forms one of the highest points of the Peninsula, from which branches extend into the northern part of Valencia. The next parallel chain to the southward branches from the first, near the sources of the Xalon and Tajuna, to the south of Soria, and extends in a long and widely diverging series of ranges south-westward, under the various names of *Somosierra*, *Guadarama*, *Sierra d' Avila*, *Sierra de Gata*, *Estella*, &c. to the Rock of Lisbon, where it terminates, after forming the watershed between the Tagus and the Duero. The next parallel chain begins near Huete, to the south of Cuença, where the ground gradually rises. Bolder hills appear at Madridejos, and, a little further south-west, the *Saierr de Irenena* clearly shews the direction of the ridge, which is soon after known by the name of *Guadalupe*. It then runs between Truxillo and Merida, under the name of *Sierra de Marchal*, penetrates into Portugal, and terminates at Cape Espichel, after forming the watershed between the Tagus and the Guadiana. The next chain is the *Sierra Morena*, which separates the basins of the Guadiana and the Guadalquivir, and has a mean elevation varying from 3000 to 4000 feet. It begins in the vicinity of Alcaraz, on the eastern border of La Mancha, and extends westward, with some interruptions, to Cape St. Vincent, before reaching which it is connected by diverging offsets or cross ranges, with the mountains which terminate at Cape Espichel. This chain forms the southern boundary of the great table-land, above which its elevation on the northern side is little, while, on the southern side, it sinks abruptly into the valley of the Guadalquivir, the upper part of which is more than 1000 feet lower than the plains of La Mancha. The last, or most southerly parallel chain, extends from the western borders of Murcia, through Granada and Andalusia, under the names of *Sierra de Gador*, *Sierra Nevada*, *Sierra Bermeja*, and *Sierra de Ronda*, and terminates on the coast between Cadiz and Gibraltar. The Sierra Nevada is the highest of the Spanish mountain chains; several of its summits are above the line of perpetual congelation, which in this latitude is 9915 feet above the level of the sea. The northern base of the Sierra is bounded partly by the plateaus of Guadix and Granada, the latter of which has an elevation of 2000 feet, and is supported on its northern side by the *Mountains of Jaen*, which divide it from the valley of the Guadalquivir. The southern base of the Sierra Nevada sinks very rapidly towards the sea. These mountains, however, do not form continuous chains; they are, on the contrary, divided by numerous transverse valleys.

Besides these principal mountain chains there are many others of less extent and elevation; among which the most considerable is that which rises south of the Ebro, on the borders of Aragon, Old and New Castille and Valencia, and which consists of many ridges running in different directions.

The lofty table-lands which lie among these mountains, form a striking contrast with the mural precipices which rise above and divide them. The whole of the central region of Spain, from the Ebro to the Sierra Morena, and from the frontiers of Portugal to the eastern watershed, consists of a series of *paramoras* or plains, separated from each other and from the lowlands by the parallel mountain chains which we have described, and having an elevation varying from about 2000 to 2664 feet above the level of the sea. Generally speaking the table-land of Old Castille is higher than that of New Castille. The southern region likewise contains single table-lands, which, however, neither have the

extent of the central plains, nor are connected with them. In a general view, Spain may be said to consist of huge mountains, elevated table-lands, rich and wide valleys, deep ravines, rapid rivers, extensive pastures, with few or no inclosures. Forests are occasionally met with; but the greater part of the country is bare, and of a whitish arid aspect, which fatigues the eye and depresses the spirits. The sea coast is in general rocky, the harbours are often intricate, and the entrance to them rendered difficult by sand-bars.

GULFS, BAYS, AND STRAITS. — *Gulf* or *Bay* of *Rosas*, and *Gulf* of *Ampola*, in Cataluña; *Encanizada*, a large inlet on the coast of Murcia, formed by a long narrow tongue of land, and communicating with the sea by a very narrow entrance; *Gulf of Almeria*, on the coast of Granada; *Gibraltar Bay* and *Strait*, *and Bay of Cadiz*, on the coast of Andalusia; *Lagos Bay*, *St. Ubes Bay*, the *Estuary of the Tagus*, *Mondego Bay*, and *Bahia d' Aveiro*, on the coast of Portugal; *Ria de Vigo*, *Ria de Pontevedra*, *Ria d' Arosa*, *Ria de Muros y de Noya*, *Ria de Corcubion*, *Ria de Camarina*, *Ria de Corme*, the *Harbour of Coruña*, *Ria de Betanços y Sada*, and *Harbour of Ferrol*, in Galicia; *Bay of Santander*, *Bay of Santona*, and others in Asturias and Biscay.

CAPES. — *Creuse*, *St. Sebastian*, *Tortosa*, *Nao*, *San Martin*, *Palos*, *Gata*, *Santa Elena*, and *Europa Point*, on the Mediterranean coast; *Tarifa Point* and *Cape Trafalgar*, in Andalusia; *Santa Maria*, *St. Vincent*, *Sines*, *Espichel*, *La Rocca* or the *Rock of Lisbon*, *Carvoeiro*, *Fezurao* and *Mondego*, in Portugal; *Silleiro*, *Corrobedo*, *Finnisterre*, *Villano*, *Sisargo*, *Prior*, *Ortegal*, in Galicia; *Penas*, *Pena Rubia*, *Lastres*, *Prieto*, *Oyambre*, *Ajo*, *Machichaco*, in Biscay.

ISLANDS. — 1. The *Balearic Islands*, viz., *Majorca*, *Minorca*, *Iviça*, *Formentera*, *Cabrera*, *Dragonera*, *Conejera*, and others, in the Mediterranean sea. *Majorca* or *Mallorca*, the largest, is situate between 39° 15′ and 39° 57′ north lat., and 2° 9′ and 3° 20′ east long., about 100 miles from the coast of Valencia. Its figure is an irregular rhomboid, and its area about 1360 square miles. The surface is hilly, and the northern half consists of high ranges of mountains, divided by deep valleys and gullies, bordered by precipices. The southern portion is finely variegated by corn fields, vineyards, olive groves, orchards, and meadows. The soil on the hills and mountains is rich and fertile, in the valleys it is moist and even marshy, and on the shore are tracts of sand and morasses. There is little wood, and no large rivers; but abundance of springs and good water. The climate is mild, agreeable, and healthy; snow and frost are almost unknown. The inhabitants resemble the Catalufians in complexion and features; their chief and almost only occupation is agriculture; but the produce in corn is barely sufficient for the support of the population. Neither rye nor maize is cultivated; but culinary vegetables and wine are abundant products. Olives and mulberries are also cultivated to a considerable extent, and produce large quantities of oil and silk. The other principal productions are flax, hemp, oranges, lemons, citrons, almonds, dates, figs, pistachio nuts, and capers. The sea abounds with fish, the taking of which affords employment to many of the inhabitants, and is a good nursery for seamen. Bay salt is made on the coast; and the stock of beeves, sheep, goats, swine, horses, and asses, is considerable. The principal towns are Palma, Falaniche, Manacor, Soller, Leuchmajor, Pollenza, and Bonalbufar. *Minorca*, 38 miles east of Majorca, contains an area of 240 square miles, about one quarter of which is cultivated, one-half pasture, and the remainder barren and waste. Wheat and barley are grown, but the produce is not sufficient for the supply. Fruit of all kinds is abundant, especially melons, grapes, and oranges; wine also is plentiful; but the chief rural wealth consists of the live stock, which consists of excellent breeds of asses and mules, cows which produce excellent cheese, sheep, goats, and swine. The climate is temperate and healthy. The island is of moderate height as approached from the sea, and its surface then appears level, with one remarkable exception towards the centre, called Toro, having on its summit a convent dedicated to the blessed Virgin. It has three excellent harbours: *Port Mahon* at the east end, *Fornella* on the north side, and *Citadella* on the west. *Iviça* forms an irregular polygon, 28 miles long by 14 broad. It yields wheat, oil, wine, flax, hemp, figs, almonds, raisins, oranges, lemons, cotton, and esparto; but its principal produce is salt, which is manufactured in great abundance in the lagunes around the island. The people are more attached to fishing than to agriculture; and the greater number of the men follow that employment, leaving the cultivation of the ground to the women, who are robust and industrious. *Formentera* is a small island to the south of Iviça; but neither it nor the others named are of any importance. The *Columbretes*, a group of rugged rocks, 35 miles from the termination of the limestone range which divides Valencia from Tortosa. The principal of the group, *Monte Colubre*, consists of the remains of an extinct volcanic crater; the highest peak of which is situate in north lat. 39° 53′ 58″, and east long. 0° 44′ 27″. The hilly part of Monte Colubre is covered with an exuberance of dwarf olives, geraniums, prickly pear, myrtles, and brushwood; but all the rest of it exhibits only hard lava, obsidian, and scoriæ. It contains also a few rabbits, but literally swarms with snakes, from which circumstance it is, with great probability, supposed to be the *Ophiusa* or Serpent island of the ancients. — (*Capt. Smith*, *Journal*, *R. Geog. Soc. Lond.*, i. 58.) The *Isle de Leon*, on the south-western coast of Andalusia, is separated from the mainland by the Rio de Santi Petri, and forms the Bay of Cadiz. Its northern end juts out into a long and narrow promontory, at the extremity of which is the city of Cadiz. The *Berlingas*, a dangerous cluster of rocky islets of Cape Carvoeiro, 50 miles north of the Rock of Lisbon. *Benidorme*, a small island on the coast of Valencia, 20 miles N.E. of Alicant.

RIVERS. — A conformation of country so mountainous as that of Spain would naturally lead us to expect a corresponding system of rivers. But, from various causes, particularly the nakedness of the country, the almost total absence of trees to collect and retain the moisture, and the consequent dryness of the atmosphere during the greater part of the year, the rivers of the Peninsula are neither so numerous nor so large as the number and the elevation of the mountains might seem likely to produce.

The EBRO rises near Reynosa, from a spring so copious that it turns a corn mill a few yards from its source. It flows south-east, and enters the Mediterranean at Alfaques, after a course of 110 leagues. It presents insuperable obstacles to navigation. Its principal affluents are—the *Xalon*, increased by the *Jiloca*, at Calatayud; the *San Martin*, and the *Guadalupe*, on the right; the *Aragon*, increased by the *Arga*, which passes Pamplona; the *Gallego*; the *Segre*, which passes Puycerda, Argel, and Lerida, and receives the *Vero*, *Cinca*, *Noguera*, *Ribagorzana*, and the *Noguera Palleresa*, all on the left.

The DUERO, or DOURO, has its source to the north of the town of Osma, in a deep lake at the summit of the Sierras de Urbion, and flows westward into the Atlantic Ocean at Oporto. It is navigable to the tower of Montcorvo, 30 leagues from the sea. Some of its affluents rise at remarkable elevations. The *Adaja* is, at Avila, 3,721 feet above the level of the sea; and the *Eresma*, where it flows past the castle of Segovia, is 3,321 feet above the same level. The principal affluents of the Douro on the right are, the *Pisuerga*, which passes Valladolid, and receives the *Arlanzon*, which passes Burgos, and the *Esgueva* and the *Carrion*; the *Valderaduay*; the *Esla*, which passes Leon; the *Ardaja*, increased by the *Eresma*, and the *Tormes*, which passes Salamanca. In Portugal it receives the *Sabor*, *Tua*, and *Tamega*, on the right; the *Coa* and *Agueda* on the left.

The TAGUS, TAJO, or TEJO, rises in the mountains of Albarracin, on the north-eastern border of New Castille, from an inconsiderable spring named Pie Isquierdo. In its course through the province of Cuença, it is considerably augmented by the waters of several streams, and before reaching Aranjuez, it dashes through the mountains into a pool of great depth, named *Olla de Borlaqué*. From

that point the river flows westward by Aranjuez, Toledo, Talavera, Alcantara, and Santarem, and enters the Atlantic Ocean through a wide estuary at Lisbon. Its principal affluents on the right are: the *Jarama*, increased by the *Henares*, and the *Manzanares*, which passes Madrid; the *Guadarama*; the *Alberche*, and the *Alagon*; the *Elga*, *Ponsul*, and *Zezere*, in Portugal. The *Magasca*, and *Salor*, in Estamadura; the *Serer*, *Zatas*, and *Cunha*, or *Almansor*, in Portugal, are the principal affluents on the left.

The GUADIANA has its source in the pools of Ruidera, to the north of Alcaraz in La Manchs. Its course is first to the north-west for 9 leagues, after which it sinks underground, and d sappearing for 7 leagues, reappears near Daymiel, at the *Ojos Eyes de Guadiana*. The intervening space is occupied by a large morass, across which the road to Andalusia passes by a long bridge or causeway. It then passes Ciudad Real, Merida, Badajos, Mertola, and enters the ocean at Ayamonte. The only important affluent is the *Giguela*, which some consider to be the principal branch.

The *Guadalquivir* rises among the mountains on the frontiers of Murcia, Jaen, and Granada, runs westward past Andujar, Cordova, and Seville, and enters the ocean to the northward of Cadiz. It is navigable for large vessels up to Seville; but its bed being obstructed by shallows, the navigation is extremely tedious. Its principal affluents on the right are:—the *Guadalimar*, increased by the *Guadalen* and the *Amudel*, which is considered by some geographers to be the principal branch of the river. The *Xenil*, or *Jenil*, from Granada, is the principal affluent on the left.

The *Segura*, with its affluents *Mundo* and *Sagonera*, in Murcia; the *Xucar*, or *Jucar*, with its affluents *Cabriel* and *Albadya*, and the *Guadalaviar*, in Valencia; the *Llobregat*, and the *Ter*, in Cataluña: the *Minho*, in Gallicia and the north of Portugal; the *Mondego*, and the *Vouga*, in Beira; the *Sado*, or *Sadao*, or improperly *Caldao*, rises in Alemtejo, flows through that province and Portuguese Estremadura, and enters a lagune below Setubal; the *Salon*, in Asturias: and the *Bidassoa*, in Navarre, which forms in the lower part of its course the boundary between France and Spain, and enters the Bay of Biscay at Fuenterabia.

LAKES. There are no lakes deserving of notice in Spain; on the coast of Valencia there is a laguña named *Albufera*, abounding in fish, which has been farmed sometimes at 60,000 piastres a-year.

MOUNTAINS.—See HESPERIAN SYSTEM, page 143.

CLIMATE.—The diversities of the climate are determined by the physical conformation of the country; and the temperature is therefore much more equable on the coasts than in the interior. On the north and west coasts the prevailing winds blow from the west, and in winter and spring discharge abundant rains. The climate is much milder on the coasts of the Mediterranean, where the east winds, which are the most frequent, never acquire the force which the west winds possess at the southern extremity of the Peninsula, especially at Cadiz. Thus, the coasts of Cataluña, Valencia, Murcia, and Granada, enjoy a mild temperature, which seldom falls so low as 32°, and generally keeps above 57° Fahrenheit. Winter, indeed, is almost unknown on the east coast, sheltered as it is by the high lands of the interior, and warmed by the rays of a cloudless sun. On the plateau of the Castilles, heat accumulates slowly, and it is not till the beginning of July that the air acquires a temperature between 57° and 64°, occasionally rising to 77°. In August, however, the coolness of the nights shoots into the morning, and is felt in the evening soon after sunset, by which means the heat of the day is considerably moderated. Except in the northern provinces, the climate of Spain is everywhere remarkable for its dryness, which sometimes degenerates into a scorching drought, when the rivers entirely disappear, vegetation is destroyed, and men and animals die of thirst. In the elevated region, which contains the capital, the summer heat is, in fact, always so great, that, according to the Spanish saying, Madrid has nine months of winter and three of hell! The ordinary extremes of temperature at Madrid are 90° Fahrenheit in summer, and 32° in winter; but there is scarcely a year in which the thermometer does not rise above 100° and fall below 14°. Many of the mountains rise above the limits of perpetual snow; while the high and unsheltered plains are swept by cold blasts in winter, which blow with such piercing keenness, that sentinels have sometimes been frozen to death on their posts at the royal palace. This is, however, greatly owing to the want of wood, which is scarcer in Spain than in any other country of Europe. In fact, along the road from Bayonne to Cadiz not a forest is to be seen, except a few patches in Biscay, the groves and avenues of Aranjuez, and in a few valleys or gorges in Andalusia; all the rest of the kingdom in this direction presents a whitish arid appearance. The mountains, destitute of vegetation, no longer attract the moisture necessary for the support of plants in the valleys and plains; the rivers are, consequently, almost all inconsiderable throughout the greater part of their rapid courses; and the plains being wholly naked and unsheltered, the climate of this elevated region necessarily experiences those extremes of heat and cold which are so detrimental to the fertility of the soil, and to the health and comfort of the people.

As Portugal is very narrow from east to west, the climate might be supposed to be nearly uniform; but the inequalities of the ground, the direction of the valleys, and the proximity of the sea, have a considerable influence on the temperature. The lower districts have a short winter, and a sort of double spring. The first begins in February, but the succeeding months are sometimes cold and rainy, at other times dry and warm. The crops are reaped in June, and by the end of July the plains are scorched, the grass becomes yellow, the trees wither, and it requires

much labour and care to preserve esculent vegetables. But, while the heat along the coasts is often more excessive than in the Torrid Zone, the temperature of the higher regions is cool and mild. The low country is adorned with a second vegetation about the end of September or beginning of October. The plants of spring suddenly succeed those of autumn, the meadows are covered with new grass, the trees seem to have resumed their foliage, and the orange groves, then in flower, give to October all the charms of the finest spring. Winter commences at the end of November, and continues till February; and is attended by much rain and violent winds. The cold is then very keen among the mountains; but, though snow collects upon the high grounds, the rivers are seldom frozen. The greatest cold is generally brought by the east wind which passes over the snowy summits of Castille. In the other seasons, and particularly in summer, the north-west wind usually prevails in the morning, and the south-west in the afternoon. But the climate of Portugal is not everywhere found as we have now described it. According to Colonel Franzini, the winter at Lisbon and near the mouth of the Tagus, continues during December, January, February, and March; spring, during April and May; summer, from June to the end of September; and autumn, during October and November. The basin of the Mondego, in the neighbourhood of Coimbra, is more temperate than that of the Tagus, but is also more humid and less salubrious. The climate of Oporto and Peñafiel is equally humid, the winters are colder and more cloudy, while, on the contrary, the summers are very warm. In Algarve the winters are always mild; and in July, August, and September the meadows are always enamelled with flowers. If October be rainy it is not unusual to see the fruit trees flourish anew in November. December and January are the wettest months, and abundant rains in April ensure a plentiful harvest.

GEOLOGICAL STRUCTURE.—The principal mountain chains differ not only in their external appearance, but also in their internal composition. They have, however, this in common, that their nuclei consist, in whole or in part, of primary and transition rocks; though not only the species but also the relations of these vary in the different chains. A great body of granite, which seldom reaches the highest points, and contains beds of gneiss and other primary rocks, ranges through the Pyrenees. It is surrounded by a predominating mass of crystalline slate and transition rocks, among which the most abundant are clay slate and limestone. On the contrary, in the Biscayan mountains, the older rocks are not widely distributed, and appear first in Galicia, where there is a great extent of granite accompanied by crystalline slate. The principal mass of the chain between Old Castille and New Castille, is composed of gneiss and granite. Between the Tagus and the Guadiana the principal rock is also granite. The chain of the Sierra Morena consists principally of transition rocks; but granite appears on its southern base, towards the Guadalquivir. Granite, however, seems to be wanting in the highest southern mountains, where the middle chain consists of mica slate abounding in garnets, which in the ridges lying before them, passes into less crystalline mica slate, chlorite slate, and clay slate, sometimes inclosing large beds of compact limestone, marble, dolomite, and serpentine. On the south coast, newer transition slate and grauwacké slate, with beds of flinty slate, rest here and there on the older slate. The basis of the rock of Gibraltar is formed of these rocks. The structure of the mountain chains corresponds generally with their chief direction. Not only the alternations of the rocks, but also the direction of the strata are conformable with the direction of the chains; but the dip or inclination of the strata varies. The primary and transition rocks are rich in ores; but the mines are confined principally to the south-western and south-eastern parts of Spain. The lead-glance mines of Linares occur in granite; those of the Sierra de Gador, in a limestone which may be referred to the oldest transition rocks; and the rich quicksilver mines of Almaden are contained in clay slate.

The secondary rocks rise to a great height on the Spanish side of the Pyrenees; and even some of the highest summits are composed of them. The western continuation of the Pyrenees, in Biscay, consists principally of secondary rocks; and it is probable that the lofty limestone ridges which separate Asturias from Leon, are a continuation of the Biscayan formation. On both sides of the Somosierra the primary are skirted by the secondary rocks, but the latter are far from the middle and higher parts of the chain. Following the road from Madrid to Andalusia, secondary rocks are met with near the transition clay slate of the passes of the Sierra Morena; but on the south side of the chain they are only to be met with very low down. The high mountains of Jaen are formed of secondary rocks; and in the northern projection of the Sierra Nevada, between Granada and Guadix, there are also secondary deposits, which, however, do not reach the higher ridges. In the vicinity of Malaga also new secondary rocks lie on the foot of the older mountain masses, and ridges of secondary rocks extend from the hills of Ronda towards the southern extremity of Spain, where the rock of Gibraltar is chiefly composed of them. The secondary rock formation extends from one mountain chain to another, rises or falls in the intermediate spaces, and forms the widely extended high table-land. The most important of the secondary rocks are variegated sandstone, marl, gryphite limestone, and the white or Jura limestone. The sandstone and marl are rich in gypsum and rock salt; and at Vallecas, near Madrid, and in some other places, there rests upon it, in single beds, that rare deposit consisting of meerschaum, with nests of silicious minerals. It is to this formation, which is widely spread over the table-lands of Old and New Castille, that these countries owe the reddish-brown colour of their soil, and the tiresome uniformity of their surface. The lias formation is widely distributed in the northern provinces, and seems to reach a considerable height on the side of the Pyrenees. In Biscay, it is remarkably prolific of an excellent iron ore. Probably also the vast beds of coal in the Asturias are subordinate to it. The white Jura limestone forms in most places the immediate cover of the variegated sandstone and marl, and is found in the north, as well as in the south of Spain in single ridges, and great mountain masses. Wherever it occurs, its presence is announced by the yellowish-brown colour of the soil which covers it. Secondary formations of limestone occur also in the Sierra de Estrella, in Portugal. Some members of the chalk formation also occur in Spain. The sandstone of the rocky ridge of the southern coast, between Cadiz and Gibraltar, and the limestone in the district of Los Barios, resemble the rocks of the Sachsen Schweiz. The first agrees with the German quader-sandstein, the latter with the Saxon planer-limestone, the equivalent of pure chalk.

Tertiary deposits do not appear to be very abundant. In the south, particularly near the sea coast, there is a deposit, full of marine organic remains, in which calcareous sand and pebbles occur, partly

in a loose mass, and partly more or less firmly compacted by means of a calcareous cement. In the vicinity of Cape St. Vincent, and all around Lisbon, the strata consist of rocks of the tertiary class, more or less mixed with trap. True volcanic rocks are said to be found in Murcia; and around Olot, in Cataluña, about fifteen distinct cones with craters occur in a space of 15 geographical miles from north to south, and 6 from east to west. The existence of plutonic rocks has been noticed in few places. Characteristic basalt occurs in Cataluña. Hypersthene rock has been found in the vicinity of Salinas de Pozo, in Old Castille, in contact with Jura limestone; and in the mountains of Jaen, near to variegated marl, containing masses of gypsum, greenstone rocks have been found.—(*Professor Hausman of Göttingen; Edin. New Phil. Journal*, xxii. 267. *Lyell's Geology.*)

The gold and silver mines, which supplied the ancients with these precious metals, are now, with the exception of the silver mine of Guadalcanal, and the gold mine of Adissa in Portugal, either exhausted or abandoned; but iron of the best quality, tin, copper, mercury, and indeed every valuable mineral abound in different parts of the Peninsula. Coal and salt mines are wrought in the Asturias, Aragon, and La Mancha, in Spain; and in Portugal, beds of coal occur near Oporto, and there is a mine of coal at Cabo de Buarcos, in Beira. Precious stones are found in various places; granite, jasper, alabaster, and marbles, of the greatest beauty and variety, may be quarried from almost every mountain.

VEGETABLE PRODUCTIONS.—The vegetable productions of the Peninsula are rich and various; the principal of which are wheat, wine, oats, barley, maize, rice, oil, honey, sugar, hemp, flax, esparto or sedge, cork, cotton, silk, sumach, barilla, and almost all kinds of fruit. Andalusia is the granary of Spain; Leon and Old Castille are almost equally productive. Barley is cultivated everywhere, but especially in Granada, Seville, Old Castille, and Murcia. Valencia produces chiefly maize and rice; the sugar-cane is also cultivated there with success, and a little cotton is grown. The olive flourishes in almost every part of Spain, and also the vine; but the eastern and southern provinces yield the finest grapes. Cataluña is exceedingly rich in forests; the mountainous districts are covered with the beech, the pine, the evergreen oak, and the cork-tree; while the chestnut and the hazel grow on the sides of the hills and in the valleys. Elms and willows fringe the margins of the rivers, and all sorts of fruit trees flourish in the plains. The mountains of Biscay still exhibit extensive forests. In Asturias apple-trees abound, from which a quantity of cider is made. Woods of ash, elm, white poplar, mulberry-tree, carob-tree, and different varieties of oak, occur in other districts. The pine and the yew clothe some of the Sierras, and in some parts of Valencia are forests of palm-trees. The two Castilles and La Mancha are almost entirely bare of timber. The inhabitants of these provinces have an inveterate and inexplicable prejudice against trees, which are mercilessly cut down or destroyed before they attain any considerable size; and the charcoal, which constitutes their principal fuel, is procured from the forests of the loftier mountains, which, from their elevation, have escaped the destructive propensities of the people. Nor is Spain excelled by any country in the abundance, variety, and delicious flavour of its fruits. Besides those common to other temperate climates, it contains many which usually belong to the tropical regions; and, in addition to the fig, pomegranate, orange, lemon, and citron, the date, plantain, banana, and cheremoya, find a congenial soil and climate in some parts of the Peninsula. Flowers and medicinal herbs grow wild on all the mountains, and load the air with the rich fragrance of their perfumes. In short, such is the variety of the temperature, occasioned by the difference of elevation, that there is scarcely a vegetable production of any country for which a fitting place may not be found in Spain. To afford a correct idea of the diffusion of the copious variety of vegetable products, the country may be divided, according to M. Huot, into six divisions. In the first, or central division, which comprises the whole of Old and New Castille, Leon, and Estremadura, none of the apple tribe are seen; the olive begins to appear only towards the south; but the vine is found in every part of it. Here, too, flourishes the ilex. In the Southern or Bætic region, which extends from the Sierra Morena and the mountains of Algarve to the sea, between Cape Palos and Cape St. Vincent, the climate exceeds that of Sicily in the intensity of its heat, and the maritime lowlands might almost be considered as a zone of Africa, being marked by the presence of the banana, the dwarf-palm, the aloe, and the cactus; while the stony districts are covered with the wild fig and the caper. Towards the middle of last century the whole coast of this region, from Marbella to Vera, was planted with sugar-canes, which yielded a produce equal in quality to that of the Havanah. Above this lowest zone rises another always verdant, and covered with the plants of Italy and Sicily; the myrtle, the orange, the lemon, the rose-laurel, the agnus-castus, the tamarisk, and the nerio, being the most common. A third and higher zone is adapted for the vine and different kinds of grain; forests of pine are found still higher; and above all are alpine plants, and perpetual snow. The eastern or Iberian region extends along the Mediterranean sea, from Cape Palos to Cape Creuse, and inland to the great watershed, including also the basin of the Ebro. It possesses all the plants of Sicily, the Archipelago, and the Levant. The olive flourishes everywhere, the carob-tree and the lentisk grow together, while the

myrtle, the laurel, the fig, and the mulberry, display their varied foliage. The grape of this region yields a strong wine; but, as the country rises towards the mountains, there occur various zones of different kinds of vegetation. The Lusitanian region extends from Cape St. Vincent to the Rock of Lisbon, and eastward to the Sierra de Estremos; while it is sheltered from the north winds by the mountains on the north of the Tagus. The lower parts are covered with sandy heaths; but one zone may be distinguished by its orange and olive groves. In its southern range are found numerous plants, long supposed to be peculiar to Madeira and the Açores, and even some of those of the Canaries. Many South American plants likewise thrive there, and some of them may even be considered indigenous. The Gallegian or Galician region extends from the Rock of Lisbon to Cape Finisterre, the productions of which differ from those of Lusitania. The oak and the chestnut abound; but the olive and the orange appear only in the low vallies, towards the south of the Douro. The northern or Cantabrian region comprises all the country from the sources of the Adour to Cape Finisterre, along the coasts of the Bay of Biscay. Downs or links occur along the coasts, but none of them are extensive. The characteristic of the region is the absence of the cistus and the rose-laurel. The orange, the olive, and the vine, are reared with difficulty; but the hills and valleys are covered with fine forests, rich crops of grain, and verdant meadows. The apple flourishes throughout the region, and cider is substituted for light wines by its inhabitants.

ANIMALS. — The animal kingdom presents nothing remarkable. The horse is, however, entitled to particular notice. The Arabs, when in possession of the country, stocked it with their finest breeds; and although the race, like everything else, has degenerated, it still shews many of the points by which it was once distinguished. The other domesticated animals are mules, asses, beeves, swine in vast numbers, sheep in millions, and multitudes of goats; nor are there wanting wild animals, as bears, wolves, and wild boars, which neglect and decay have left the undisturbed tenants of some of the wilder and more sequestered districts. The sea-coasts abound with fish, which afford employment to many of the inhabitants, and furnish lawful food during the numerous fasts of the Catholic Church.

KINGDOM OF SPAIN. — (España.)

This kingdom includes the greater part of the Peninsula, and is divided into a number of large provinces, inhabited by people differing in character, manners, and customs, who speak different languages or dialects, and are separated as widely by their interests and feelings as by their locality.

PEOPLE. — It would be difficult, we might almost say impossible, to give a fair representation of the national character of the Spaniards, not only on account of the varied aspect which it assumes in the several classes of society, but because the natives of different provinces differ from each other not less widely than the inhabitants of distant countries. The Castillians, especially those of Old Castille, pride themselves in their high sense of honour, and are described as gloomy and taciturn, more solemn and stately than the people of other provinces, but as upright, generous, and sincere. The Gallegos, or Galicians, are the most industrious, and claim to be the most thoroughly trustworthy. They are the reapers and general labourers of both Spain and Portugal; and their very name, from this circumstance, has become synonymous with servant. Next to them the Catalans and Valencians, though differing as much as the Scots and Irish, have the reputation of being active and enterprising. The Murcians bear the worst character, and are described as lazy, listless, plotting, and suspicious. The Biscayans are precisely the reverse, being laborious, active, frank, lively, sociable, fiery, and generous. The Estremadurians are indolent and vain; and the Andalusians partake of the character of the Spaniard and the Arab. With the vivacity natural to the people of southern climes, they unite the imaginative and careless character of the people of the East. Sober and patient, they are always gay and lively, although in a state of the utmost physical want; but necessity renders them active, industrious, and even ingenious. They are considered a boastful people, and indeed are characterised as the Gascons of Spain; and their Arabic pronunciation accounts for the epithets bestowed upon them by both Spaniards and foreigners. The Spanish community is divided into two great castes, those of pure Gothic or blue blood, and those of mixed Gothic and Moorish descent, or black blood. The former constitute an inferior class of nobility, called hidalgos (i. e. *hijos de algo*,

son of somebody), who are entitled to the appellation of Don, and are admissible to posts of honour in the state or army. They also enjoy several other privileges and immunities, and look with great contempt on their black-blooded brethren.

What is called by foreigners the Spanish language, is properly the speech of Castille. It seems to have been formed during the three centuries of Visigothic dominion, and is evidently the result of a mixture of the Teutonic with the Latin. The Arabic afterwards enriched it with a number of expressions, and exercised some influence upon its pronunciation. Under the dominion of the Moors there was a period during which the Arabic was almost universally employed; but the Spaniards who had taken refuge in the mountains still retained their native tongue, although they did not all speak the same dialect. In Cataluña the Provençal or Limousin, prevailed; in Asturias, Leon, and Old Castille, the Castillian; in Galicia, the Gallego, the parent of the Portuguese; in Navarre and some parts of Biscay, the Escualdunac or Basque. When, in the eleventh century, the Christians began to recover Spain from the Moors, their language was spread with their conquests towards the south; and Spain became divided, in respect of language, into three portions. The Catalan, spoken in the states of Aragon, extended from the Pyrenees to the southern borders of Murcia; the Castillian prevailed through all the central region, from Asturias to Granada; and the Portuguese from Galicia to Algarve.

POPULATION. — According to the old historians, the population of Spain, about the year 1380, was estimated at 21,800,000; in 1618, the estimate was 9,000,000, or 7,500,000; in 1700, 8,000,000; in 1723, 7,625,000; in 1726, 5,423,000; in 1769, 9,301,728; in 1788, 10,143,000; in 1803, 10,351,000; in 1821, 11,248,000; in 1826, 13,712,000: but, according to the estimate published by the government in August 1837, it amounted only to 11,964,000. According to the official returns of 1826, the population in that year consisted of the following classes: — Nobility, 1,440,000; citizens, farmers, and others having the qualification of electors, 1,560,000; citizens and householders, 1,573,686; employed in agriculture, 8,613,470; mercantile and manufacturing, 2,318,256; domestic servants, 276,000; vagabonds, 140,000; smugglers, 100,000; customhouse officers, 40,000; officers of the inquisition, 22,000; wandering beggars, 26,000; convicts, 2000. In 1803, the clergy of cathedrals and parishes amounted to 86,546; the officers of the Inquisition and Cruzado, 8,659; monks, 69,664; nuns, 38,429. Total of religious persons, 203,298, or one in fifty of the population. The distribution of this population offers the most extraordinary contrast. Guipuscoa has 700 inhabitants to the square mile; Valencia, 513; and Navarre, 466; while, on the other hand, the provinces of Cuença, Salamanca, and Estremadura, are nearly as thinly peopled as Tartary.

EDUCATION. — The education of the people has always been greatly neglected in Spain, and for this many causes might be assigned: among which the weakness and incapacity of the government; the dread, on the part of the governing powers, civil and ecclesiastical, of knowledge and its effects on corrupt institutions; the innate love of the people for a life of reckless adventure, and their wandering habits, increased of late by the long struggle for national independence, and the recent civil war. So far, however, from being wanting in institutions to promote education, Spain was, perhaps, the country of Europe where they most abounded. No country had a greater number of endowed schools; but nowhere have the objects for which these were instituted been so completely disregarded, or their endowments more grossly misapplied. During the last years of Ferdinand VII., the education of the people was almost exclusively entrusted to the Jesuits. The study of the physical and mathematical sciences was denounced, and many a university was deprived of its endowments. This lamentable state of things has been increased, rather than diminished, by the revolution. However good in themselves such institutions might have been, they were so closely allied with the church which had so long misruled this unhappy country, that when the church itself was struck down, they fell along with it; and as the ministers who have succeeded each other during the last seven years have shewn much more zeal in destroying than in erecting, the country has been deprived of many institutions which might have been made useful, without having others substituted for them. Numerous projects for the establishment of a general system of education have been submitted to the Cortes, but nothing has yet been done. The country still remains without one well-conducted school, or one wisely-regulated university. Individuals, however, have been endeavouring to accomplish what the government has left undone. A society is now established for educational purposes, consisting already of more than five hundred subscribing members. Their attention has hitherto been confined to the establishment of infant schools in the metropolis, but the committee intend soon to direct their attention to the higher schools, and to offer to the government the assistance of their money and their advice. — *(Correspondent of Athenæum*, from Madrid, 5th February 1840.)

RELIGION. — The Roman Catholic faith is exclusively professed in Spain, and in no other country had the church acquired a more complete control of the government and the people. The country literally swarmed with hosts of idle and luxurious

monks and priests, who lived upon the wealth of the land without contributing in the smallest degree to the welfare and improvement of the people. They kept them, on the contrary, in a state of the most abject ignorance and superstition, opposing every obstacle to the diffusion of knowledge, and making every thing subservient to their selfish interests. But, though the worst parts of the establishment have been swept away, they have left behind them a mass of evil which must long continue to retard the moral improvement of the people, who are said to have passed at once from superstition to infidelity. The hierarchy consisted of seven archbishops, namely those of Toledo, Seville, Santiago, Granada, Burgos, Tarragona, and Zaragoza; and of 47 bishops, namely those of Cordoba, Cuença, Siguenza, Jaen, Segovia, Carthagena, Osma, Valladolid, and the titular bishop of the order of Santiago, suffragans of Toledo; Malaga, Cadiz, Canaries, and Ceuta, suffragans of Seville; Salamanca, Tuy, Avila, Coria, Placencia, Astorga, Zamora, Orense, Badajos, Mondoñedo, Lugo, and Ciudad-Rodrigo, suffragans of Santiago; Guadix and Almeria, suffragans of Granada; Pamplona, Calahorra, and Palencia, suffragans of Burgos; Barcelona, Lerida, Tortosa, Vich, Urgel, and Salsona, suffragans of Tarragona; Huesca, Barbastro, Jaca, Tarazona, Albarracin, and Terruel, suffragans of Zaragoza; Segorbe, Orihuela, and Majorca, suffragans of Valencia; and the two independent Bishops of Leon and Oviedo. The Archbishop of Toledo is primate of the kingdom, Chancellor of Castille, and a perpetual member of the Council of State. The influence of this hierarchy was once all powerful, but is now rapidly declining. The regular clergy, with their monasteries and convents, have been suppressed; the whole property of the church has been confiscated, and the secular clergy made entirely dependent upon the state.

GOVERNMENT. — Before the war of independence (1808-14), the government was an absolute monarchy, except in the three provinces of Biscay, which have always enjoyed great privileges called *fueros;* in particular, the right of having provincial assemblies elected by the people to watch over their interests, to fix the assessments for local purposes, and the amount to be paid to the king as a gratuitous gift. These provinces, moreover, communicated with France without the obstacle of custom-houses, the line of which was placed in rear of them. After the French invasion, the ancient Cortes, or National Assembly, which had been long abolished, was called together in 1810, in the Isle de Leon, and in 1812, published a constitution, of the most democratic character, based upon that of the French of 1791. The single assembly instituted by this constitution was composed of deputies chosen by the juntas of parishes, districts, and provinces, the last of which directly appointed the deputies. The government was declared to be an hereditary limited monarchy, with the sovereignty residing essentially in the nation, which alone had the right of establishing fundamental laws. The king shared with the Cortes the legislative power, but had only a suspensive veto upon the acts of the assembly. He had, however, the sole executive power; his person was declared sacred and inviolable; and his ministers only were responsible. But this constitution was abolished by Ferdinand VII. when he returned to Spain in 1814; and the king resumed his former absolute power. In 1820, a military insurrection broke out in the Isle of Leon, the constitution of 1812 was again proclaimed, to which the king was compelled to adhere; but, in 1823, the Duc d'Angoulême, at the head of a French army, set the king at liberty, overturned the new system, and restored the ancient absolute rule. In 1832, Ferdinand, having no male issue, abolished the Salic law, which was first established in Spain by the Bourbon dynasty, and destined his daughter as his successor. His brother, the infant Don Carlos, publicly protested against this violation of his rights; but the king's will prevailed. On the death of the king, in the following year, his widow, Queen Christina, assumed the reins of government as Regent, in the name of her infant daughter, who was proclaimed queen by the name of Ysabel II. She was acknowledged by all the central and southern provinces; but Biscay and Navarre proclaimed Don Carlos; more, however, with the view of maintaining their ancient privileges, which seemed to be threatened by the new government, than from a regard to his interests. In 1834, the Regent promulgated a new constitution under the name of the Estatuto Real, and the Cortes were re-established under a new form. They were divided into two estates or chambers; the one styled that of the *proceres* (nobles), composed of the prelates and hereditary grandees of Spain, and of certain persons named for life by the Crown; the second, called that of *procuradores*, composed of citizens elected for three years by the juntas of provinces, the members of which were elected by the municipal bodies or ayuntamientos. The second chamber alone had the right of imposing taxes; but neither chamber was permitted to discuss other matters than those submitted to their deliberation by royal decree. The

Cortes convoked in 1836, having been suddenly dissolved in May of that year, an insurrection broke out in August at San Ildefonso, where the Court then resided, and forced the Queen-regent to accept the constitution of 1812. The constitution, however, and the government remain in an extremely unsettled state; the Spaniards have completely broken through all the trammels of that despotism under which they were oppressed for centuries; the spirit of radical reform has pervaded every corner of the Peninsula; and nothing, it appears, will now satisfy them but the most thoroughly popular institutions.

The kingdom of Spain was first formed in the year 1516, by the union of the kingdom of Aragon, with that of Castille and Leon in the person of Joanna, the only child and heiress of Fernando the Catholic, the last king of Aragon, and of his wife Isabella, in her own right Queen of Castille and Leon. Joanna's son, Don Carlos I., was the first King of Spain. He was also Archduke of Austria, and is best known in history as the Emperor Charles V. His descendants possessed the throne till 1700, when the Austrian dynasty became extinct by the death of Don Carlos II. who left his kingdom by will to Philip Duke of Anjou, the grandson of Louis XIV. King of France, and great grandson of his aunt, Anne of Austria, the daughter of Philip III. King of Spain, and wife of Louis XIII. King of France. Philip's accession was opposed by the Archdukes of Austria, who claimed the kingdom as the natural heirs; but, after a protracted warfare, Philip prevailed, and became the founder of the existing Bourbon dynasties of Spain and Naples. The kings of Spain of the Bourbon race have claimed and exercised the sovereignty of the order of the Golden Fleece, as attached to their crown; while it is also claimed and exercised by the Emperor of Austria, as the heir of the founder, Philip Duke of Burgundy. There are, besides, three other distinguished orders of knighthood properly Spanish, the grandmasterships of which have also been annexed to the Crown, namely:—The Order of Calatrava, founded in 1158 by Sancho King of Castille; The Order of Alcantara, founded in 1156; and the Order of Santiago, founded in 1170, both by Fernando II. King of Leon. There are also two minor orders, that of Montesa, founded by Don Jayme the second King of Aragon and Valencia, in 1317; and that of Carlos III. founded in 1771.

FINANCES. — The system of taxation in Spain is in the highest degree defective, and has nearly every fault which can vitiate a revenue system, and render it a curse to a country. It is grossly unequal and arbitrary, and the functionaries employed in collecting it are, from the highest to the lowest, guilty of the most flagrant corruption and abuse. For the last thirty years at least, the revenues have hardly ever exceeded the expenditure, exclusive of the interest of the debt; and they are at present in a state of great disorder. From papers published for the use of the Cortes, it appears that the expenditure for the year 1840 was estimated at £16,900,000, and the income at only £10,270,000, leaving a deficiency of £6,630,000; and even in this income was included an extraordinary contribution of £3,500,000. The national debt exceeds £160,000,000. The whole revenues would not suffice to pay the interest of the debt; and Spain is virtually in a state of bankruptcy, without credit abroad, and without the means of raising at home a revenue sufficient for the necessary expenditure of the state.

ARMY AND NAVY. — The army of Spain, which, during the sixteenth century was the best in Europe, gradually declined, like every other department of the State, till, at the period of the French invasion, it was found to be utterly inefficient and useless, and rather an incumbrance than an aid to its allies. Of late years, however, it has been newly organized, and placed in a state of considerable efficiency. Every exertion has been made to pay the troops regularly, and, though slow in their operations, the soldiers have proved sufficient to maintain the Queen's government, and defeat the pretensions of her rival uncle Don Carlos; though the latter has been supported by Austria, and perhaps by other governments. The Spanish military navy has ceased to exist.

PRODUCTIVE INDUSTRY. — *Agriculture.* The greater part of the land belongs to the nobility, the church, and towns or corporations; and agriculture is generally in the most wretched state. None, or scarcely any of the lands in Leon, Castille, Estremadura, and Andalusia are inclosed. Farms are everywhere small, and the farmers are in a state of great poverty. Notwithstanding the lowness of rents, and the cheapness of living, the agriculturists are unable to make the smallest advances on account of their farming operations, and are obliged to raise funds by mortgaging their crops. Even the growers of oil and wine frequently sell the anticipated produce of their lands for three-fourths of its value. The farmers live in the meanest huts, crowded

together in villages. The operations of treading and cleaning the corn are performed in the open air, and the grain is left in heaps in the field till it can be sold. The implements of husbandry are of the rudest kind, especially in Old Castille and Leon, where the soil is sandy and easily cultivated. In Andalusia, and along the coast of the Mediterranean, where the soil is more tenacious, implements of a better sort are in use, but they are still very rude. The use of fanners is nowhere known, except in a few of the seaport towns from which corn is occasionally shipped. The tenant, after paying tithes, and other public burdens, has little more than half the produce left to pay rent and labour, and to support his family. In Biscay estates are more divided, and the provincial government grants a portion of the reserved land to every applicant, on condition of his building a house, and cultivating a certain portion of it. The rich irrigated lands around Granada, Murcia, and Valencia are let in very small portions, seldom exceeding ten acres, and often not more than one or two. They yield two, three, or even four crops in the year, principally of vegetables, maize, and red pepper; and are much more valuable than the corn-lands of Andalusia and Castille. The farmers have neither the means nor the enterprize necessary for an improved system of agriculture, and, although they had both, the want of a market for their produce, or of a motive to attempt improvements, would prevent any from being made. Agricultural improvements, however, have taken place to some extent in Biscay, Navarre, and Aragon, each of which provinces has its separate laws and administration, and the oppressiveness of the general government is consequently less felt. Their produce is rye, maize, wheat, barley, and oats. In Leon, Castille, and Andalusia, agriculture is almost confined to the growing of wheat, which is sown at the commencement of the rains, after a slight ploughing. The system of a rotation of crops is unknown. On the banks of some of the rivers, in low lands, and in the neighbourhood of villages, where the wells are good; beans and other vegetables are cultivated, and occasionally maize. The most careful cultivation is to be found in the *vegas* and *huertas* of Granada, Murcia, and Valencia, the extent of which is considerable; and the waters of the Xenil, the Segura, and the Xucar rarely fail to afford a sufficient supply for the purposes of irrigation. These are therefore justly looked upon as the gardens of Spain, and produce not only every variety of fruits, but also all kinds of vegetables and plants used as food or as materials for manufactures. The mild red pepper grown in the huerta of Murcia, is celebrated all over Spain, and forms a very considerable article of trade with the interior; rice is the principal produce of the huerta of Valencia; mulberries are extensively cultivated in both, and silk is produced in large quantities. But these rich and beautiful valleys are by no means to be considered as a proof of the agricultural capabilities of Spain; for, if we except the northern provinces, where the temperature approaches that of England, and where, by successive falls of rain, the land is kept moist and fertile, with a few maritime districts in the south and south-west, and some valleys watered by mountain streams, or which admit of artificial irrigation, the rest, comprising the whole interior table-lands, or nearly one-half of the kingdom, sometimes resembles more a Libyan desert than a country adapted for cultivation. There the farmer is entirely dependent upon the weather; and if he collects his harvest once in three years, he considers himself repaid.

Many causes have undoubtedly contributed to produce the present low state of agriculture; the principal of which is the peculiar nature of the tenures by which landed property is held. Three fourths of Spain consist of indivisible *mayorazgos*, or estates held in very strict entail, a system which operates as a bar to improvement, and keeps even the proprietors themselves, as well as their tenants and dependents, in continual poverty. Tenures in mortmain were also for a long time continually on the increase, and these discouraged improvement and paralyzed industry, by enhancing the price of land, and rendering the acquisition of territorial property more difficult, just in proportion as they diminished its real or productive value.

Another of the evils which afflict Spain is the *Mesta*, an incorporated company of proprietors of migratory sheep, who are invested with many exclusive privileges highly prejudicial to the interests of agriculture. The Mesta originated in an alliance formed between the mountaineers and the inhabitants of the plains about the year 1556, for the purpose of placing their flocks and herds under the protection of the laws; and in process of time it contrived, not only to monopolize the whole herbage of the kingdom, but also to convert the arable lands into open pasture. This injurious association consists of nobles, persons in power, members of wealthy monasteries and ecclesiastical chapters, who claim and exercise the right of feeding their flocks on the pasture lands all over the kingdom, and almost free of expense; it has caused these privileges to be digested into a regular code; has instituted tri-

bunals of its own for punishing at pleasure any infraction of its rights; and actually enjoys the complete monopoly of the pasturage, and, consequently, of the wool trade of Spain. Estremadura has suffered most severely from this scourge, from its vicinity to the mountains of Leon and Castille, where the flocks of the Mesta have their summer pasturage; and from and to which they migrate periodically, according to the season.

Scarcely a quarter of the surface of Spain is applied to any profitable purpose; more than three-fifths are devoted to pasturage, and only about a twelfth is occupied by wood. Old Castille and Leon, in spite of all their natural disadvantages, are considered as the granaries of the kingdom, and have their outlets in the north by various ports, from Gijon to St. Sebastian, the principal being Santander and Bilbao. The elevated *campos*, which extend from Logroño to Burgos, and thence on each side of the Arlanza and Pisuerga, and along the Carrion and other streams which water the provinces of Palencia, Valladolid, and Zamora, yield immense quantities of wheat; and further west, on the south of the Douro, the provinces of Toro and Salamanca, may be considered as forming a portion of the richest wheat country in Spain, or perhaps in the world. The crop is often so abundant for a series of years, that the produce of the fields at a distance from the villages is allowed to rot on the ground, the expense of conveying it home being considered more than its value. The means of carriage to the coasts or other profitable markets are exceedingly deficient, nearly the only available means of transport being the backs of mules and asses, or small carts drawn by oxen. The gross agricultural produce of the kingdom was estimated by Miñano, in 1826, at £76,965,000 sterling, and the net produce at £28,403,666; and whatever may be the correctness of these numbers, no doubt can be entertained that since the beginning of the present century the agricultural produce has been doubled. The number of beeves in that year, was estimated at 2,944,885; horses, 400,495; mules, 223,646; sheep, 18,687,159; goats, 5,187,668; asses, 641,788; swine, 2,728,283; bee-hives, 1,697,593.

Mines and Minerals.—Another branch of national industry, that of the mines, has of late made considerable progress. Since the cessation of their intercourse with America, the Spaniards have turned their attention to the mineral wealth of their own country; and in almost every instance the working has proved highly profitable. The silver mine of Guadalcanal has been re-opened, and is now worked by a company, who rent it from the government. The newly discovered lead mines in the mountains near Adra and Almeria are in such a state of prosperity, and the ore is so rich and abundant, that although they are wrought almost entirely by manual labour, they produce the mineral at a price with which foreigners cannot compete. The quicksilver mine of Almaden has proved a rich treasure to the government; it seems to be inexhaustible, and its produce is considered as one of the ordinary items of the public revenue, and one of the principal securities for public loans. Another mine of the same metal has been recently discovered near Cordova, and promises to be as abundant. Coal of excellent quality abounds in several districts; and the recent discovery of a large deposit of that mineral in Majorca, not far from the sea, promises to be a new source of wealth to the people of that island. Nearly all the cobalt used in Europe is the produce of the extensive mines recently discovered in Galicia.

Manufactures and Trade.—The coasts of Spain are inhabited by a race of men whose character is quite distinct from that of the inhabitants of the inland provinces. Indolence is generally assumed to be the national characteristic of the Spaniards; but it is peculiar to the latter class; the former being, on the contrary, bold and enterprising. The mountaineer is also distinguished by many good qualities, which only require some exciting cause to bring them into action; and in commercial and manufacturing pursuits, these qualities have been turned to some account. Barcelona and the coasts of Cataluña are enriched by a flourishing trade; that carried on by St. Felice de Guixols extends as far as the Antilles and the Black Sea. The excellent dock-yards of Lloret, Tosa, Malgrut, and Arenys de Mar afford great facilities to the trade of these towns, which are noted for their excellent shipbuilding. Their female, infirm, and aged population are actively employed in the manufacture of blonde and stockings by machinery. Palamos, Rosas, San Felice, and the neighbouring ports trade in cork, which is a source of great wealth to Gerona. This neighbourhood is also the centre of the operations of the most enterprising race of smugglers. From Vinaroz, Murviedro, Peniscola, and Valencia, from the Balearic islands, wines, oils, and oranges are exported to distant places; and an active commerce is also carried on from Alicant, Carthagena, Almeria, Malaga, Cadiz, and other

southern ports. On the northern coast, Coruña is by its commercial transactions closely connected with America; Ribadeo and Viviero trade with Hamburg, Danzig, and Riga; Ferrol, one of the great naval arsenals, is also a commercial town. The pilchard fishers of Vigo cover the waters of Galicia with their vessels, and convey the produce to all parts of southern Europe. Gijon, Bilbao, Santander, and San Sebastian have, from a remote period, exported to France and America the wool and iron which are brought from the neighbouring provinces. The staple commodity of Valencia is silk, which forms an important branch of trade in its raw state, and also affords profitable employment to the home manufacturer. The looms of Valencia produce tissues, gauzes, and ribands, which rival in beauty those of France. The silk manufactures of Talavera de la Reyna and Zaragoza are also in high repute. In the north, Bilbao and Santander; in the south, Seville and Cadiz, are the great entrepots for the exportation of wool, which is also spun and woven in Cataluña, and manufactured into cloth and flannel. In this branch of industry, Barcelona, Manresa, and Castel Tersol also participate. The fine cloth of Zaragoza is in great request. Galicia annually imports 20,000 cwt. of flax, which is conveyed to Santiago, and thence dispersed through the province, to be converted into linen, and then sold in the Castilles. An extensive export of Galician linen is also made to Cadiz, where it is exchanged for French goods and colonial produce. Biscay, Guipuscoa, Galicia, and Cataluña, abound in iron, which is exported to France and America, or consumed in the inland and southern provinces. Bilbao and Cumana are the entrepots for the exportation of iron, and Vittoria for the excellent metal produced in Biscay. The manufacture of arms is carried on to a considerable extent, of which there are two large factories in Biscay; at Albacete and Toledo, swords and other weapons are made; at Segovia, fire arms are manufactured, and at this place, at Seville, and Placencia there are also good founderies. In the vicinity of Ribadeo in Galicia there are numerous forges of iron for the sea service. Seville has an extensive trade in leather, a kind of which, prepared with nut-galls, is that so much sought after under the name of Spanish leather. Ferrol and Vittoria possess a considerable number of tanneries; and the former has an establishment for the preparation of varnished leather. Besides the wines of Alicant and Malaga, and those produced at the mouth of the Ebro, the dark, coarse wines of Murviedro are extensively exported. Reus, Torrento, and some other places on the coast between Valencia and Barcelona, are celebrated for their brandy. Dried fruits are largely exported from Alicant, Malaga, Valencia, Seville, and Gijon. Valencia is noted for its beautiful dyes, and for its manufacture of strong and tasteful cotton fabrics. At Manires, a small town near Valencia, is a manufactory of glazed pottery, which is a monopoly in the hands of a few families, who pretend that their process is a secret handed down from the Moors. The important part, however, is the preparation of the varnish, which resembles gilding; the pottery itself is otherwise of no great value. The net produce of commerce and manufactures was estimated by Miñano, in 1826, at about £14,660,000. At present, the foreign commerce of Spain is almost exclusively carried on with France and England, the former taking lead, oil, dried fruits, wool, cork, corn, silk, quicksilver, and other minor articles; the latter taking the greater part of the wool, nearly all the best wines of the southern coast, most of the barilla, fresh and dried fruits, cork, quicksilver, kid and goat skins, sumach, and sometimes corn and silk. All the commercial regulations are opposed to the introduction of English produce, but favourable to that of France, which takes comparatively little in return. This, however, is greatly remedied by the smugglers, through whose means large quantities of English goods are introduced into the country.

INLAND COMMUNICATION. — The *caminos reales*, or king's highways, are not numerous, nor are they all kept in good repair. From Madrid there are two good roads to Burgos, one passing through Valladolid, and the other through Aranda de Douro. From Burgos the road is continued by Vittoria and Irun to France. Both of these roads are, or used to be, in tolerable repair. From Valladolid an excellent road has been made, by Palencia and Reynosa, to Santander. There are also two roads to Bilbao, one by Miranda, the other by Vittoria. To the north-west there is a camino real through Galicia to Coruña and Ferrol, but in such a state of disrepair as to be in many places impassable for loaded carriages or carts. There is only one camino real leading to Estremadura. To the south there is one leading over the Sierra Morena to Seville, through Andujar and Cordova. The whole line is in a pretty good state of repair; but the portion from Seville to Cadiz is not upon the same footing as the rest. To the east there are two great roads, one through the province of Cuença to Valencia; but it has long been in such a wretched state as to be entirely abandoned to the muleteers and ox carts of the villagers. The other, which is in a better condition, goes far to the south of the direct line, passing through Albacete and Almanza, in Murcia. This is the route of the diligence and heavy waggons to Valencia and Barcelona. The direct line to Barcelona is by Guadalaxara and Zaragoza; but although there is a camino real in that direction, it is in such a state as not to admit of carriages travelling beyond a walking pace, nor of the passage of loaded waggons. In Cataluña the roads are comparatively numerous and excellent, and there are stage coaches between most of the important towns. In some places lines of road, several leagues in length, have been com-

pleted for many years; but they are nearly useless, in consequence of the original plans having been abandoned, from want of industry and funds. The other roads which are traced on the maps may be divided into three classes, viz.—1. Roads which have been originally made and covered with road metal; 2. Roads across the plains and through the valleys, formed by the tracks of the country carts, and which have only in a few places been artificially constructed; 3. The mule roads or paths, worn by the feet of the mules travelling over the mountains during a long series of years. The first class have almost all been neglected, and are scarcely passable even by light carts. The second, being without bridge, are rendered impassable by the rains. The third are numerous, and well adapted for passing the mountains; but as they not only cross many torrents, but also in some cases pass along the beds of the torrents, they are always during the rainy season very dangerous, and liable to frequent interruption. The revenue applicable to the construction and repair of the roads is derived partly from tolls and partly from local taxes. The caminos reales are under the charge of a board established in Madrid; but no funds seem to be appropriated to roads of the second and third classes, though small tolls are levied from passengers upon them. In Biscay and Navarre the roads are under the superintendence of the provincial administration, and are more numerous, better constructed, and more carefully kept than in the rest of the country.

With respect to *canals*, no country of Europe experiences the want of this means of conveyance more than Spain, though apparently there are in none greater facilities for constructing them. But the nature of the country, the imbecility of the government, and the ignorance and poverty of the people, have hitherto opposed insuperable obstacles to their formation. Still, however, some advances have been made; and, besides the numerous canals for irrigation, which are found in Cataluña, Valencia, Aragon, Murcia, and Granada, there are several of more importance destined for navigation.

The *Imperial Canal*, begun by the Emperor Charles V., extends along the right bank of the Ebro, from Tudela to near Zaragoza, about 66 miles. It is nine feet deep, and passes the river Xalon by an aqueduct 4260 feet long.

The *Canal of Castille* commences at *Alar-del-Rey*, in the province of Burgos, where it receives the waters of the Pisuerga, and extends to the Carrion, near Calahorra, under the name of the North Canal. From the Carrion it turns southward, passes Grigots, El Seron, Rio-Seco, Villa-umbrales, and Bercerril de Campos, and Sahagun, terminating at Paredes de Nava. From El Seron a branch extends in the direction of Palencia and Valladolid, under the name of the South Canal, and is open as far as El Soto de los Albures near Dueñas, in the province of Palencia. The total length is about 77 miles, with a depth of six feet. It is intended to be extended northward to Golmir, near Reynosa, and southward to Segovia, passing by Palencia and Valladolid.

The *Canal of the Manzanares* commences at Madrid, and was to extend to Vacia-Madrid, at the confluence of the Manzanares with the Jarama. The length executed is about eleven miles.

The *Canal of Murcia*, of which only a small part has been executed, commences at the low source of the Guardal, and extends about 19 miles, with a depth of 6 or 7 feet. It was intended to reach Carthagena, a total length of 130 miles, with a tunnel at Topares 13,841 yards long.

The *Canal of Albacete*, in Murcia, formed between 1805 and 1808, for the purpose of draining the marshes near that town, commences about 6000 yards to the westward of the town, and extends to the Jucar, near Baldegangs, a distance of 24 miles; 7½ feet deep.

The *Canal of the Alfaques*, or of *San Carlos*, was intended to give a harbour to Tortosa, in Cataluña, and has a length of nine miles; but it was so ill executed, that soon after it was finished its banks fell in, and rendered it useless.

The *Canal of Guadarama*, undertaken for the purpose of conveying building materials to Madrid, has been executed to the extent of about twelve miles, and has now been abandoned.

Several other great canals have been projected, the principal of which are, the great irrigation canal of Seo d'Urgel, in Cataluña; that which is to form a junction between the Ebro and the Douro; the Baetican canal, to render the Guadalquivir navigable, as it formerly was, from Cordova to Seville; and the works necessary to render the Tagus navigable, from Aranjuez to Lisbon.

ADMINISTRATIVE DIVISIONS. — By a royal decree, dated 30th November 1833, Spain, including the Balearic and Canary Islands, was divided into forty-nine civil provinces, named after their respective capitals, except the islands and the provinces of Navarre, Biscay, Alava, and Guipuscoa, which retain their ancient names. Thirty-six of these provinces belong to the Crown of Castille, and thirteen to that of Aragon; but they are all placed under the charge of intendants or subdelegados of the Minister of the Interior. For military purposes, Spain is divided into twelve great captain-generalates *(capitanias generales)*, and five smaller governments or commands; and in each civil province there is a military governor subordinate to the captain-general. These military provinces are: — *New Castille*, *Old Castille*, *Galicia*, *Estremadura*, *Andalusia*, *Granada*, *Valencia*, *Cataluña*, *Aragon*, *Navarre*, *Guipuscoa*, and the *Balearic Islands*. The five smaller governments are those of *Mahon* and *Iviça*, dependent on the captain-general of Majorca; *Campo de Gibraltar*, in the province of Cadiz; *Ceuta*, on the coast of Africa; and the *Canary Islands*. The kingdom is likewise divided into three maritime departments, the chief stations of which are the *Isle de Leon*, *Ferrol*, and *Carthagena*; in each of which there is a captain-general of the marine, with various subordinate officers. For judiciary purposes, Spain is divided into twelve Royal Courts, or Superior Tribunals, whose titles are: — The *Royal Chancery of Valladolid*, whose jurisdiction extends over Castille and Leon, and also decides in the last resort, the civil and criminal business of Biscay; the *Royal Chancery of Granada*; the *Royal Council of Navarre*, at Pamplona; the Royal Audiencias of *Galicia*, at Coruña; of the *Asturias*, at Oviedo; of the *Canaries*, at Las Palmas; of *Estremadura*, at Caceres; of *Aragon*, at Zaragoza; of *Valencia*, at Valencia; of *Cataluña*, at Barcelona; and of *Majorca*, at Palma. These judiciary provinces are divided into *Corregidorias*, each under the jurisdiction of a Corregidor, to whom are subordinate a certain number of *Alcades Majores*, and other officers.

TABLE of the FORTY-NINE PROVINCES of SPAIN, with their Area and Population, as published by Government in a Royal Decree of 3d August 1837; and the Names of their Principal Towns.

Provinces.	Area in Square Miles.	Population.	Cities and Towns.
1. NEW CASTILLE.			
Madrid,	1,315	369,126	MADRID, Florida, Casa del Campo, Getafe, Leganes, Chinchon, Alcala de Henares, Colmenar, El Escurial.
Guadalaxara,	1,946	159,044	Guadalaxara or Guadalajara, Siguenza, Brihuega, Trillo, Molina.
Toledo,	8,774	276,952	Toledo, Aranjuez, Ocaña, Consuegra, Madridejos, Talavera de la Reyna (Queen's Talavera.)
Cuença,	11,304	234,582	Cuença, Requena, San Clemente, Hueste.
Ciudad Real,	7,543	277,788	Ciudad Real, Almaden, Almagro, Manzanares, Val de Peñas, Almodovar, El Viso, Calatrava, Nuestra Señora de Guadalupe.
2. OLD CASTILLE.			
Burgos,	7,674	224,407	Burgos, Aranda de Duero, Lerma.
Logroño,		147,718	Logroño, Calahorra, Alfaro, Agreda, Ezcaray, Haro.
Santander,		166,730	Santander, Laredo, Santillana, Santoña, Espinosa.
Oviedo,	3,686	434,635	Oviedo, Aviles, Gijon, Navia.
Soria,	4,076	115,619	Soria, Osma.
Segovia,	3,466	134,854	Segovia, San Ildefonso, or La Granja.
Avila,	2,569	137,903	Avila, Medina del Campo, Arevalo, Peñaranda.
Leon,	5,894	267,438	Leon, Astorga, Sahagun, Ponferada, Bembire, Rueda.
Palencia,	1,733	148,491	Palencia, Torquemada, Saldaña, Cervera, Carrion.
Valladolid,	3,279	184,647	Valladolid, Medina del Rio Seco, Tordesillas, Peñafiel.
Salamanca,	5,626	210,314	Salamanca, San Estevan de la Sierra, Ciudad-Rodrigo, Bejar, Espeja.
Zamora,	3,562	159,425	Zamora, Toro, Fermoselle, Morales, Benavente, Monbuey, Puebla de Sanabria.
3. GALICIA.			
Coruña,	15,897	435,670	Coruña, Santiago de Compostella, Muros, Padron, Betanzos, Ferrol.
Lugo,		357,272	Lugo, Mondoñedo, Ribadeo.
Orense,		319,038	Orense, Ribadavia, Monterey, Oencia.
Pontevedra,		360,002	Pontevedra, Tuy, Bayona, Vigo.
4. ESTREMADURA.			
Badajos,	14,329	316,622	Badajos, Albuquerque, Xeres de los Cavalleros, Olivença, Zafra, Merida, Llerena, Cabeza de Buey.
Caceres,		231,398	Caceres, Cazar de Caceres, Alcantâra, Valencia, Placencia, Coria, Trujillo or Truxillo.
5. ANDALUSIA.			
Seville,	8,989	367,303	Seville, Guadalcanal, Cazalla, Constantina, Utrera, Carmona, Ecija, Ossuna, Estepa.
Huelva,		133,470	Huelva, Ayamonte, Moguer, Palos, Niebla, Aracena.
Cadiz,		324,703	Cadiz, Xeres de la Frontera, San Fernando, Caracca, Puerto Real, Medina Sidonia, Puerto de Santa Maria, Arcos de la Frontera, Rota, San Lucar de Barrameda, Tarifa, Algeziras, San Roque.
Cordova,	4,159	315,459	Cordoba or Cordova, Baeza, Bujalance, Lucena, Fuente Ovejuna, Hinojosa, Carlota, Montilla, Priego.
6. GRANADA.			
Granada,	9,622	376,974	Granada, Alhama, Loja or Loxa, Ugijar, Huescar, Baza, Guadix, Almuñecar, Motril, Torviscon.
Almeria,		234,789	Almeria, Adra, Dalias, Mujacar, Velez el rubio, Velez el Blanco.
Malaga,		338,442	Malaga, Marbella, Velez Malaga, Ronda, Grazalema, Antequera, Archidona, Estepona.
7. VALENCIA.			
Valencia,	7,683	451,685	Valencia, Grao, Chelva, Liria, Murviedro, Cullera, Alcira, San Felipe (Jativa), Montesa.
Alicant,		318,444	Alicant, Onteniente, Denia, Gandia, Alcoy, Orihuela, Monovar, Elche, Elda.
Castellon-de-la-plana,		199,022	Castellon de la Plana, Segorbe, Alcora, Vinaroz, Benincarlo, Villareal, Peniscola, Morella.
Murcia,	7,877	280,694	Murcia, Carthagena, Lorca, Archena, Alhama, Caravaca, Molina, Moratalla, Totana.
Albacete,		180,763	Albacete, Chinchilla, Hellin, Villena, Almanza, Alcaraz.
8. CATALUÑA.			
Barcelona,	12,180	442,473	Barcelona, Villafranca de Panades, Igualada, Manresa, Monserrat, Mataro, Tarrasa, Vich.
Tarragona,		233,477	Tarragona, Reus, Valls, Tortosa, Alfaques or San Carlos.
Lerida,		151,322	Lerida, Corvera, Solsona, Cardona, Urgel.
Gerona,		214,150	Gerona, Santa Maria de Arens, Figueras, Rosas, Olot, Ripoll, Castillo de Ampurias.
9. ARAGON.			
Zaragoza,	14,726	304,823	Zaragoza (Saragossa), Daroca, Calatayud, Tarazona.
Huesca,		214,874	Huesca, Jaca, Barbastro, Ayerbe, Mequinenza.
Teruel,		214,988	Teruel, Alcañiz, Caspe, Albarracin.
10. NAVARRE,	2,450	221,728	Pamplona, Estella, Tudela, Corrella, Tafalla.
11. GUIPUSCOA.			
Alava,	1,082	67,523	Vittoria, El Ciego, Salvatierra, Orduña.
Biscay,	1,267	111,436	Bilbao, Somorrostro, Portugalete, Durango.
Carry forward,	177,086	11,634,934	

Provinces.	Area in Square Miles.	Population.	Cities and Towns.
Brought forward.	177,046..	11,634,934	
Guipuscoa,.....	622....	104,491..	San Sebastian, Fuente Rabbia (Fontarabia), Mondragon, Los Passages, Placencia, Tolosa, Vergara, Oñate, Ernani, Segura.
12. BALEARIC ISLANDS.			
Palma,.....	1,757....	229,197..	Palma, Manacor Pollenza, Soller, Falanicha, in Majorca; Ciudadela and Mahon, in Minorca; Iviça or Ibiza.
Canary Islands,..	3,220....	199,950..	Laguna, Santa Cruz, Las Palmas, Orotava, &c.
	182,685..	12,168,572	

Spain was formerly divided into the *kingdoms* of Galicia, Navarre, Aragon, Valencia, Murcia, Granada, and Leon; the *principalities* of Asturias and Cataluña or Catalonia; the *lordship* of Biscay (Viscaya;) and the *provinces* of Andalusia, Old Castille, New Castille, and Estremadura. Of these, Aragon, Valencia, Murcia, Cataluña, and the Balearic Islands formed the kingdom of Aragon; all the rest belonged to the kingdom of Castille and Leon.

§ *Cities and Towns.*

MADRID, the capital of the kingdom, in New Castille, in north lat. 40° 25′ 7″; and west long. 3° 33′ 9″, is situate on some sandy hills, on the left bank of the Manzanares, about 2220 feet above the level of the sea. It is nearly 8 miles in circuit, of a compact form, and contains about 9000 houses; 146 churches, chapels, oratories, and other religious edifices; 18 hospitals, 13 colleges, 15 academies, 15 public libraries, 6 prisons, 15 granite gates, 85 squares and *plazas*, and 50 public wells, which supply the inhabitants with excellent water, brought from the mountains 30 miles distant. The city is almost in the centre of the kingdom, and was declared the capital of the monarchy by an ordonance of Philip II. The modern part of the town may be considered as fine, from its having good houses, straight streets paved with flint, and lined with foot pavements. The Calle de Alcala is reckoned one of the finest streets in Europe, but it is, according to Mr. Inglis, the only fine street in Madrid. Many of the other streets are good, and very many respectable, of tolerable width, and the houses are lofty and well built; but there is no magnificent street but the Calle de Alcala, which runs through the middle of the city, from east to west, passing through the Puerta del Sol, a large open area, where eight of the principal streets converge. As in all the other cities of Spain, the streets have a sombre aspect, arising from the number of convents, whose long reach of wall, with grated windows, and the absence of doors, throw a chill over the mind of the passer by. Before the recent changes, there were sixty-two of these buildings in the city, and in many instances one side of a whole street was occupied by a convent: in the Calle de Atocha there were no fewer than eight; and some of the streets on the outskirts contained scarcely any houses but those dedicated to religion. The whole of the middle classes, and indeed all, excepting people of the very highest rank, live in stories or flats, as they are called in Scotland, each story forming a distinct house. The royal palace, on the banks of the Manzanares, to the west of the city, is a large square pile of building, each of its fronts being 470 feet in length, by 100 in height, all built of white stone, enclosing a court of 140 feet square, and fitted up with the greatest magnificence; but the only other building in the city of any architectural importance is the picture gallery, recently erected, which is equal in extent and perhaps little inferior in excellence to any other in Europe. Every Spaniard is proud of the Prado at Madrid, but, divested of its living attractions, it is not considered by travellers as entitled to much praise. It consists of a spacious walk, at least 2 miles long, from north to south, on the east side of the city, from 200 to 300 yards broad, adorned with rows of trees and several fountains, and is the great resort of all ranks and classes of the citizens in the evenings. There are two other fine walks, the *Paseo de las delicias*, along the Manzanares, on the west side of the city, and the gardens of *Buen Retiro* on the east side, beyond the Prado. Madrid possesses three theatres, and several scientific and literary institutions, among which are the Royal Spanish Academy, the Royal Academy of History, and the Estudios Reales de San Isidro, a kind of University, with sixteen professors. There is no want of libraries. The two largest are the Royal Library, containing about 200,000 volumes, several valuable manuscripts, and a rich collection of coins illustrative of Spanish history; and the Library of San Isidro, which contains about 60,000. There are 13 hospitals for the relief of bodily infirmity, and 10 different institutions for philanthropic purposes, the support of the wretched, and the relief of the poor. The total number of inhabitants is estimated at about 170,000. Their consumption of provisions amounted in 1825 to 240,000 sheep; 12,500 beeves; 70,000 swine; 2256 tons of charcoal; 148 tons of soap; 113,040 gallons of oil; 80,000 bushels of corn; 1,770,000 gallons of wine; 17,700 gallons of snow; 379 tons of candles; and 18,000 bushels of salt. The hotels are of a very inferior description, and strangers consequently have difficulty in obtaining comfortable accommodation. Madrid is probably the most expensive capital in Europe; being situate in the midst of a sterile country, where there is no pasture land, no rivers, scarcely any gardens, and no easy communication with the sea, or with any of the distant or more productive provinces. Notwithstanding these drawbacks the markets are well supplied; and all kinds of meat, poultry, game, vegetables, and fruit may be had of excellent quality: fish and milk are the only scarce articles; fuel, however, is very expensive.

Madrid has no suburbs, and no country seats or villas of the citizens; nor are there in the neighbourhood any forests or orchards, except in the valley of the Manzanares, and a few olive trees at the convent of St. Jeronimo, to the eastward. A hundred yards from the gates all is desert; but at no great distance are the royal residences of *La Casa del Campo*, *La Florida*, *Mongloa*, *Zarzuela*, and *El Pardo*; and the more celebrated palaces of *Escurial*, *San Ildefonso* or *La Granja*, and *Aranjuez*. The *Escurial* or *Escorial*, is situate in a desert at the foot of the Sierra de Guadarama, 34 miles north-west of Madrid, and 3683 feet above the level of the sea. It consists of a monastery and a palace, forming together a stupendous mass of building, surpassing in its internal decorations anything of the kind elsewhere to be found. The Escurial was built by King Philip II. in fulfilment of a vow made at the battle of St. Quentin, which he gained in 1557; and consists of a number of square courts built in the form of a gridiron, in honour of San Lorenzo, the martyr, to whose intercession he ascribed his success, and who is said to have been roasted to death on an instrument of that kind. It contains the splendid mausoleum of the Austrian and Bourbon kings of Spain, a fine collection of pictures, a rich library, and a college. It is said to contain 51 bells, 48 wine cellars, 80 stair-cases, 73 fountains, 8 organs, 12,000 windows and doors, 1860 rooms, 1560 oil paintings, and fresco paintings, which if brought together would form a square of 1100 feet. The circumference of the building is 4800 feet, or little less than a mile. *San Ildefonso* or *La Granja*, was built by Philip V. in a finer situation than that of the Escurial, on the north side of the Sierra de Guadarama, two leagues S.E. of Segovia. It is placed in a recess of the mountains, which screen it from the scorching heat of summer, and leave it open to the refreshing breezes from the north, at an elevation of 4149, or, according to others, 3791 feet above the level of the sea. The palace is a fine building, fitted

up in the most sumptuous style, and the garden, with its water-works, is said to have cost £7,000,000. There is here also a celebrated manufactory of glass mirrors, which has produced the largest, if not the finest, in the world. *Aranjuez* is situate in a dead level, on the banks of the Tagus, 27 miles S. by E. of Madrid. The palace is a large and fine building, and the grounds form one of the most delightful retreats attached to any palace. Every spot of ground is laid out with the utmost care, and the whole space is occupied by gardens, woods, orchards, and innumerable avenues; and here and there the waters of the river are trained into cataracts. The object sought has been to cover the level tract, in which the palace is situate, with the richest verdure, and to assemble in it all the natural productions congenial to the climate. This has been effected by irrigation, which, aided by a warm climate, produces an endless succession of beautiful vegetation.

Toledo, the ancient capital of Spain, and the see of the ecclesiastical primate, is situate upon a hill of considerable elevation, nearly surrounded by the Tagus, 40 miles S.W. of Madrid. The city is old, ill-built, and in a state of decay; it still possesses some remains of its ancient splendour, in the Alcazar, the palace of the Moorish kings, which was repaired and embellished by Carlos I., but is now falling to ruin; and the cathedral, one of the largest and most magnificent gothic temples in existence, with a treasury of gold, silver, and jewels, valued at £10,000,000 sterling. It is served by forty canons, fifty prebendaries, and fifty chaplains. There are besides, in the city, 38 parish churches, and 36 convents and monasteries. This city was long the stronghold of the monks and priests of Spain; and the recent downfall of the church, though it may have cleared it of part of the ecclesiastics who swarmed in it, must have been attended by the loss of their revenues, upon which the support of the population mainly depended. There are in the city a lunatic asylum, a well-frequented university, and a college for girls, the daughters of officers and employees, who are well educated and maintained at the expense of Government, till they marry or enter a convent. Near the city is the sword manufactory, which has been long celebrated for the excellence of its blades. Population about 15,000. The revenues of the archbishop amounted, about sixty years ago, to £70,000 a-year, but latterly they fell to £40,000. *Alcala de Henares*, 12 miles E. by N. of Madrid, a small town with 5000 inhabitants, noted for its university, formerly the second in the kingdom, a military academy, and two libraries. *Guadalaxara*, 27 miles E. by N. of Madrid, is noted for some fine buildings, a bridge ascribed to Julius Cæsar, and numerous cloth-works. Population 7000. *Ciudad Real*, the capital of La Mancha, contains about 8000 inhabitants, and has a celebrated fair for asses and mules. *Val de Peñas*, in the same province, is noted for its excellent wine; and *Almaden* for its mines of mercury, considered to be the richest in Europe. They formerly employed about 900 workmen, and produced annually about 22,000 quintals of mercury; but they were, a few years ago, pillaged by the troops of the pretender Don Carlos, and overflowed with water, for the purpose of depriving the Queen of this source of revenue. *Guadalupe*, 37 miles E. of Truxillo, a small town in the mountains, with a sanctuary of Nuestra Señora (our Lady), which is visited by crowds of pilgrims.

Old Castille. — VALLADOLID, an episcopal city at the confluence of the Esgueva and Pisuerga, 100 miles N.N.W. of Madrid, was formerly very flourishing, but is now much decayed. It is the seat of a university, with eight colleges, the residence of the Captain-general of Old Castille, and the seat of the royal-chancery of Castille and Leon. There are also a royal chateau, the birthplace of Philip II., and of several other kings, and a magnificent cathedral. — Population about 21,000. At *Simancas*, a small town, 10 miles S.W. of the city, the general archives of the kingdom of Castille are preserved, in a fine building erected for the purpose. *Burgos*, an archiepiscopal city, with about 12,000 inhabitants, irregularly built upon a hill, near the Arlanzon, abounds with churches and convents, and contains an idle and poor population: 60 miles N.E. of Valladolid. *Logroño*, a town of 8000 inhabitants on the right bank of the Ebro, 160 miles N.N.E. of Madrid; has several manufactures, and an important yearly fair. *Calahorra*, an episcopal city, with 4000 inhabitants, on the Ebro, S.E. of Logroño, is only noted for the fertility of its environs, and the ruins of its ancient splendour. *Palencia*, 26 miles N.N.E of Valladolid, an episcopal city, with a cathedral, one of the largest and finest in Spain. — Population 11,000. *Medina del Rio Seco*, 20 miles N.W. of Valladolid, is noted for a battle in which the Spaniards were defeated by the French, in 1808. *Soria*, 125 miles N.E. of Madrid, is a fine town, with about 5400 inhabitants, and is noted for its trade in wool. A few miles to the north of Soria is the site of *Numantia*, so renowned for its obstinate defence against the Romans. *Segovia*, 45 miles N.W. by N. of Madrid, is an ancient Celtiberian city, embellished by the Roman Emperor Trajan, and several Moorish kings. It contains a large Roman aqueduct, in good preservation, a large cathedral, and the Alcazar, a fine Moorish palace, full of remarkable curiosities, a mint, and a royal military school. It has been long celebrated for its cloth, is the see of a bishop, and has about 13,000 inhabitants. *Avila*, 70 miles W. by N. of Madrid, is an episcopal city, in a valley 3485 feet above the level of the sea. It has 4000 inhabitants, a university, and several remains of antiquities and monuments of the middle ages. *Medina del Campo*, 35 miles S.W. of Valladolid, has a college, an economical society, and several good buildings. *Zamora*, an episcopal city, with a fine bridge over the Duero. Population 10,000. *Salamanca*, an episcopal city upon the Tormes, over which there is a bridge of 27 arches, partly built by the Romans, and partly by Philip V. Numerous buildings, of every age and style, have procured for it the name of Little Rome; but a great part of them were destroyed during the late war. It has a fine cathedral, and a celebrated university, once considered among the first in Europe, but now so much decayed as to be reckoned only the tenth among the fifteen universities of Spain. — Population 14,000. *Ciudad Rodrigo*, a fortified town on the Agueda, near the frontiers of Portugal. — Population 4,300. *Santander*, a flourishing seaport on the coast of the Bay of Biscay, connected with the interior by a superb road recently made.—Population about 19,000. *Oviedo*, the capital of the Asturias, and the cradle of the Spanish monarchy, an episcopal city, with a university and 10,000 inhabitants. *Gijon*, a considerable seaport town of the Asturias, formerly the residence of King Pelayo, has an institute founded by Carlos IV., for teaching mathematics, physics, and navigation. — Population 6000. *Leon*, an episcopal city, with a cathedral, considered as the finest church in Spain; 80 miles N.W. of Valladolid. — Population 5500. *Astorga*, a small episcopal city, with some Roman antiquities; 30 miles S.W. of Leon.

Galicia. — CORUÑA (CORUNNA), a flourishing commercial and fortified town, with one of the best harbours in Spain, and 23,000 inhabitants, great part of whom are employed in the manufacture of cigars, linen, hats, and cordage. Near it are *Betanzos*, a small town, with a good harbour, and a considerable trade, noted for its fisheries and light wines; and *Ferrol*, one of the three great naval arsenals of Spain, with a very fine natural harbour, defended by formidable batteries. It has also a school of navigation, and 13,000 inhabitants. *Santiago de Compostella*, a large archiepiscopal city, with 23,000 inhabitants, and a great cathedral, dedicated to the two apostles St. James the Great and St. James the Less, which is a great resort of pilgrims. It is also the seat of a flourishing university, and has numerous manufactures of linen, silk stockings, images, and chaplets. *Lugo*, an episcopal city, with a fine cathedral and town-house, Roman walls, thermal waters, and about 12,000 inhabitants. *Mondoñedo*, an episcopal city, with 6000 inhabitants, and numerous manufactories of linen, and tanneries. *Orense*, an episcopal city on the Minho, noted for its baths, chocolate, and hams; a fine cathedral, and a magnificent bridge.—Population about 5000. *Pontevedra* has a good harbour, a considerable trade, and a fishery of sardines. — Population 5000. *Tuy*, an episcopal city, and *Vigo*, a sea-port, are both possessed of considerable trade, and contain about 6000 inhabitants each.

Biscayan Provinces. — SAN SEBASTIAN, a fortified seaport town on a peninsular promontory, the residence of the Captain-general of Guipuscoa, and a place of considerable trade. It withstood a memorable siege from the British army in 1813, when it was taken by storm, and reduced to ashes. It has since been entirely rebuilt on a regular plan, and is now one of the finest towns in Spain.—Population on 9000. *Vittoria*, the chief town of the province of Alava is a fine city in an inland plain, 1777 feet above the level of the sea, with several good built new, and considerable trade and industry.—Population 12,000. It is celebrated for a great victory gained in June 1813, by the British and Portuguese army over the French. BILBAO, the capital of Biscay, situate on the river Ibaicabal, 10 miles from the sea, is a fine town with 15,000 inhabitants, and one of the most commercial towns in the kingdom. It is the great entrepot of the Spanish wool for exportation. *Vergara*, a small town with a college. *Los Passages*, a small town with a harbour reckoned one of the best in Europe, near the French frontier. *Guetle*, a small town with a university and iron forges. *Durango*, a small town 17 miles S.E. of Bilbao. *Somarrostro*, a place with the most celebrated iron mines in Spain.

Navarre. — PAMPLONA, the capital, a gloomy and ill-built episcopal city, and one of the principal fortresses of Spain. Population 15,000. *Tudela*, a fine episcopal and commercial city, with a college, a bridge of 17 arches across the Ebro, and 8000 inhabitants.

Aragon. — ZARAGOZA (SARAGOSSA), an archiepiscopal city, situate upon the Ebro, which divides it into two parts connected by a bridge of seven wide arches. It is the residence of the Captain-general of Aragon, and the seat of the Audiencia Real. It has a public library, a seminary, several colleges, an economical society, an academy of fine arts, and a university, which holds the third rank in Spain for the number of students. The fine church of Nuestra Señora de Pilar, is celebrated for its sanctuary, which attracts a great number of pilgrims. Its churches formerly surpassed in riches and magnificence all the other churches in Spain; but most of them, as well as the other buildings, were greatly injured during the memorable siege which it sustained against the French in 1808. — Population 43,000. *Tarazona*, a very ancient episcopal city, with 10,000 inhabitants. *Calatayud* (the Roman *Bilbilis*), an industrious episcopal city on the Xalon, with 9000 inhabitants. *Huesca*, an episcopal city of great antiquity, with a university and several fine buildings.—Population 3000. *Jaca*, a fortified and industrious town, with 3000 inhabitants. *Teruel*, an episcopal city, with an industrious population of 8000. *Alcañiz*, a town with 5400 inhabitants, noted for its wool, cheese, and mines of alum. *Albarracin*, a fortified town on the Guadalaviar, with 2,227 inhabitants, situate in a bleak and barren district.

Cataluña. — BARCELONA, the capital, a large and fine city, is situate on the shore of the Mediterranean Sea, between the rivers Llobregat and Besos, in the midst of a well cultivated and delightful plain, and contains about 120,000 inhabitants, all busily engaged in trade or manufactures. It consists of the Old Town, the New Town, the Citadel, and the suburb of *Barceloneta*, all surrounded with regular fortifications, on which there is a delightful walk; there is besides the Rambla, a walk scarcely inferior to the Boulevards of Paris. The city is completely commanded by the fortress of Monjuich, on a hill to the southward. The harbour is formed by a vast mole of stonework projecting into the sea. The city possesses four public libraries, eight colleges, and several other scientific and literary establishments. It derived its Roman name of *Barcino* from Hamilcar Barcas, a Cathaginian general, by whom it was founded about 230 B. C. N.W. by W. 26 miles from Barcelona is *Montserrat*, a rugged mountain, containing a magnificent Benedictine convent, and a number of hermitages. The conventual church of Nuestra Señora, (our Lady the Virgin Mary), on this hill, is one of the most frequented places of pilgrimage in Spain. *Tarragona*, an archiepiscopal and commercial city, with about 11,000 inhabitants, on the sea coast, S.W. of Barcelona. In the neighbourhood is a majestic tomb, believed to be that of the Scipios, killed in Spain during the second Punic war. *Reus*, 12 miles W. of Tarragona, has grown up within the last half century from a small country town to a flourishing commercial place, with 25,000 inhabitants, and has several important manufactures, the produce of which is exported from its port of Salou. *Tortosa*, an ancient fortified and episcopal city on the left bank of the Ebro, several miles from its mouth, has several fine buildings, some remains of Roman and Arabic antiquities, a good harbour, and 16,000 inhabitants. *Lerida*, an episcopal city, with strong fortifications, and 13,000 inhabitants, in a picturesque situation on the right bank of the Segre. *Cervera*, a small town, the seat of a university, founded by Philip V., 60 miles W.N.W. of Barcelona. *Gerona*, an episcopal city, with 6000 inhabitants, little distinguished for industry; is situate on the Ter, in the north-eastern part of the province, and underwent a memorable siege from the French in 1808, when its fortifications were almost entirely destroyed. *Olot*, 60 miles N. by E. of Barcelona, with 14,000 inhabitants, has a great transit trade. It is surrounded by an ancient volcanic district, shewing fifteen distinct cones and craters, the most perfect of which are in the neighbourhood of the town. *Figueras*, a pretty little town, 20 miles N.E. by N. of Gerona, has a citadel, considered to be one of the most remarkable fortresses in Europe. It has bomb-proof casemates capable of holding 6000 men, stables for 5000 horses, and cisterns and magazines sufficient to hold provisions for a siege of eighteen months. Near Figueras, on the Gulf of Rosas, is the small town of *Castello de Ampurias*, situate in the midst of pestilential marshes, on the site of *Emporiæ*, a great Roman commercial city, said to have contained 100,000 inhabitants. *Rosas*, at the entrance of the gulf to which it gives its name, is a small town, but is flourishing and rapidly increasing in the number of its inhabitants. *Cadaques*, a small town, with 2900 inhabitants, to the south of Cape Creuse, and east of Rosas, has a good harbour and a considerable amount of shipping. *Mataro*, on the coast N. E. of Barcelona, is a thriving manufacturing town, with 13,000 inhabitants, who are employed in spinning cotton, weaving silk stockings, laces, handkerchiefs, velvets, &c. *Urgel*, an episcopal city, with 2600 inhabitants, on the Segre, near the frontier. To the north-east of Urgel is *Puigcerda* or *Puycerda*, the chief place of Cerdagne, formerly a frontier fortress, but dismantled in 1678. — Population 1500. *Vich*, or *Vique*, 37 miles north of Barcelona, an episcopal city, in a fertile and well cultivated country, is noted for its linen manufactures, cotton spinning, and for the mines of copper and coal in its neighbourhood.—Population 13,000. *Cardona*, 45 miles N. W. of Barcelona, a small town, noted for a mine of rock-salt dug in a deposit of salt 360 feet thick, and of such hardness as to receive a fine polish. The mine resembles a huge stone quarry, about 12 miles in circuit; and the salt contains not the smallest particle of mould or gravel. The Cardonero, a small mountain stream, flows through it, and for many miles below deposits salt upon its banks. The only access to and from Cardona is by a foot path across the mountains, so difficult as to occupy six days between Cardona and Barcelona.

Valencia. — VALENCIA, the capital, a large and fine city on the banks of the Guadalaviar, situate in a fertile and delightful plain, is one of the most industrious towns in Spain. It possesses a university, the most frequented in the kingdom, and several other scientific and literary establishments; and, next to those of Madrid, its presses produce the greatest number of books. Its cathedral is considered to be one of the finest churches in Spain. — Population 66,000. The Mall and the Alameda are two fine public walks; from the latter of which a fine road leads to *Grao*, a town of 5000 inhabitants, with an insecure anchorage, which serves as the port of Valencia. *Liria*, 21 miles N. W. by W. of Valencia, is a considerable town, with an industrious population of 13,000. *Murviedro*, 17 miles N. of Valencia, an ill built, ugly town, with 6000 inhabitants, stands upon the site of the ancient *Saguntum*, the taking of which

by Hannibal was the ostensible cause of the second Punic war. *San Felipe* or *Jatica*, 40 miles S.S.W. of Valencia, is a large flourishing town, with 15,000 inhabitants. *Alicant*, a moderate sized, but very commercial town, noted for its wines, with a strong citadel, a harbour, and a roadstead, frequented by a great number of vessels.—Population 25,000. *Alcoy*, N.W., and *Elche*, S.W. of Alicant, two large inland towns, with a population of 18,000 and 19,000. *Orihuela*, 30 miles S.W. of Alicant, a large town situate in a plain called the Garden of Spain. Its varied industry, its university, its academy, libraries, and other public establishments, and the residence of the bishop of Alicant, make it a place of considerable importance.—Population 26,000. *Castellon de la Plana*, 40 miles N. of Valencia, a flourishing commercial town, near the sea-coast.—Population 15,000. *Segorbe*, an ancient episcopal city, 37 miles N.W. of Valencia, with 6000 inhabitants. *Peniscola*, a small fortified town in the N.E. part of the province.

Murcia.—MURCIA, the capital, and the residence of the bishop of Carthagena, is a large city on the Segura, with a fine cathedral, an episcopal palace, five colleges, a botanical garden, &c. and 36,000 inhabitants. It was very much damaged by earthquakes in 1829. *Lorca*, 40 miles S.W. of Murcia, a busy manufacturing town, with 40,000 inhabitants. *Carthagena*, on the south coast of the province, a very ancient fortified episcopal city, situate on the shore of a gulf which forms one of the finest harbours in the Mediterranean. It was formerly one of the principal stations of the Spanish military navy, and contained basins, building slips, and magazines for building, repairing, and fitting out vessels. The population amounted to 36,000; but the fleet having ceased to exist, Carthagena will probably decline. *Albacete*, a small town, noted for its cattle fair.—Population 9000. *Chinchilla*, a commercial town, with 10,000 inhabitants. *Almanza*, a well built town, with 5000 inhabitants, and a great annual fair, 65 miles N. of Murcia. In 1707, during the war of the succession, the French gained a great victory near this town, over the allied armies, who supported the Archduke Charles of Austria.

Granada.—GRANADA, an archi-episcopal city, situated on the Darro, near its confluence with the Xenil, in a plain renowned for its beauty and fertility, 2314 feet above the level of the sea. The plain is about 10 miles long by 7 wide, and is kept in a state of perpetual verdure by irrigation. Granada was the capital of the last Moorish kingdom in Spain, and still contains the palace of the kings, the famous Alhambra, which is reckoned one of the finest existing specimens of Moorish architecture; and the Xeneralife, their pleasure-house; but no description can convey to the reader any just idea of these buildings. The cathedral, also a fine building, contains the tombs of Ferdinand and Isabella, the conquerors of Granada; of their daughter Joanna, the first queen of Spain; and of her husband, the Archduke Philip of Austria. The university is reckoned the sixth in rank; and the population, twenty years ago, was reckoned at 80,000; but the trade having now completely failed, idleness and poverty generally prevail. Near Granada is the town of *Santa Fe*, which originated in an entrenched camp formed by Ferdinand and Isabella, when besieging the city. *Motril*, 36 miles miles S. of Granada, is a flourishing town, in the midst of fertile fields, where the sugar-cane is cultivated. There are also in the neighbourhood productive salines and lead mines, and the rum made here is reckoned equal to that of Jamaica.—Population 12,000. *Ugijar*, 50 miles S.E. of Granada, a small town with a population of 3000, is noted for the industry of its inhabitants, who are of Moorish descent. In the neighbouring district of the Alpujarras, the Iberian Company have established the most extensive lead mines in Europe. *Alhamut*, 30 miles S.W. of Granada, is noted for its baths, and is reckoned one of the highest towns in Europe above the level of the sea. *Guadix*, 35 miles E. of Granada, is a bishop's see, with several potteries, and 9000 inhabitants. *Loxa* or *Loja*, west of Granada, on the Xenil, a busy manufacturing town, with 14,000 inhabitants. *Almeria*, a very ancient episcopal city, at the head of a large bay, with a good harbour, and considerable trade in wine and other produce.—Population 19,000. *Velez Rubio* and *Velez el Blanco*, two neighbouring towns, about 60 miles N.N.E. of Almeria, the former with 11,000 inhabitants employed in the manufacture of common cloth, and the latter, with 7000, and noted for a magnificent alcazar, or Moorish palace. *Malaga*, on the coast S.W. of Granada, is a fine episcopal and fortified city, situated at the head of a bay, in the midst of a delightful country, celebrated for its wines, raisins, almonds, and other fruits, the exportation of which forms the principal article of its flourishing trade.—Population 60,000. *Velez Malaga*, also on the coast, to the eastward, is remarkable for the unusual fertility of its territory, and the rich produce of its agriculture, of which exquisite wines, sugar, oil, and liqueurs form the principal part.—Population 14,000. *Ronda*, 94 miles W.S.W. of Granada, a large town with 18,000 inhabitants, divided into two parts by a frightful chasm, which is crossed by two bridges, and through which the river Guadalavin or Guadiaro flows. The town is noted for the manufacture of arms. *Antequera*, N.E. of Ronda, a busy town, with 20,000 inhabitants. *Marbella*, on the coast between Malaga and Gibraltar, is a fine seaport town, with considerable manufactures and fisheries.—Population 4300.

Andalusia.—SEVILLE, a large city on the left bank of the Guadalquivir, 230 miles S.W. by S. from Madrid, and 100 from the sea. It was the Roman *Hirpalis*, and is reckoned one of the most ancient towns in Europe, and is still one of the richest and most important in Spain. Among the many public buildings which adorn Seville, the most remarkable are, the cathedral, a large and fine church, partly Gothic and partly Roman, with a large organ of 5400 pipes, and a Moorish square tower 350 feet high, surmounted by a giralda or weather-cock, from which it takes its name; the magnificent palace of the archbishop; the alcazar, or ancient palace of the Moorish kings; the lonja or exchange, where the records of the Spanish navigators are preserved; the tobacco manufactory, a vast building inclosing twenty courts, erected in 1757 at the cost of £390,000 sterling. Seville likewise possesses several scientific and literary establishments, among which are the university, one of the best frequented in Spain, with nine colleges, &c. It was formerly the great entrepot of Spanish commerce with America; but though the Guadalquivir is still navigable up to the city, yet the trade has disappeared, the principal part of it now consisting of the export of oranges, with which about 40 vessels are annually freighted. Next to Toledo and Murcia, among the larger cities of Spain, superstition and bigotry had the firmest footing in Seville; and the morals of the people are consequently very low; idleness, indolence, and vice being the general characteristic of all classes. The river is crossed by a bridge of boats; and on the right bank, about 5 miles from the city is the village of *Santi Ponce*, built on the site of the ancient *Italica*, the birth-place of the Emperors Trajan, Adrian, and Theodosius, and of the poet Silius Italicus. CADIZ, a large sea-port town, built at the extremity of a long promontory, projected into the sea from the Isle de Leon, 54 miles S.S.W. of Seville, in north lat. 36° 31′ 53″ and west long. 6° 2s′ 10″. Nature and art have contributed to render it one of the strongest fortresses in Europe. The tongue of sand by which it is joined to the island, is about 5 miles long, and in some parts only from 200 to 300 yards broad. About a mile and a half from Cadiz the tongue is crossed by a magnificent fortress called the Cortadura, erected in 1812, which presents a formidable range of batteries mounted by 140 guns. Before entering Cadiz another strong battery must be passed, so that the city may be considered as almost impregnable on the land side. The streets are clean, and many of them wide, and there is no want of finely situate, commodious, and even elegant houses; but the chief external charm of Cadiz is found in the delightful promenade which the ramparts afford. There are few objects of curiosity to visit, no antiquities, and few public buildings worthy of notice. The principal of these are two cathedrals, the old one remarkable for nothing but its treasures and relics, and the new one chiefly interesting for a long time as a splendid ruin. It was begun about a century ago, and was meant to be in the most gorgeous style of the Composite order, but the funds intended for its erection failed, or were diverted to other purposes, and the work was falling rapidly to decay; it is now in progress of

completion, the bishop having for many years devoted the whole of his revenues to this object. Cadiz was several years ago declared a free port, but it is nevertheless in a state of decline, without trade, and one-third of the houses are said to be unoccupied.* The ramparts have a circuit of 7500 Spanish yards, and comprise four castles,—San Sebastian, San Lorenzo, Santa Catalina, and Santi Petri. The city contains 3740 houses, 223 streets, 34 plazas, most of them little better than courts, 28 churches, 39 public buildings, 5 gates, and 2 theatres. The population, in December 1837, amounted to 58,525. On the eastern side of the bay of Cadiz is the sea-port town *Puerto de Santa Maria*, with 18,000 inhabitants, at the mouth of the river Guadelete, and, a few miles inland, the town of *Xeres* or *Xeres de la Frontera*, with 34,000; the latter celebrated for the manufacture, and the former for the export of *sherry* wine. The annual average exported in 1835-6-7, was 28,627 butts, each containing 600 bottles, or altogether 17,176,200 bottles, or 1,431,350 dozen. Great part of the wine is exported to America, and yet the total amount exported is below the consumption of England alone! Xeres is also celebrated in history as the place where Rodrigo, the last Gothic king of Spain, was defeated and killed by the Moorish invaders in A. D. 771. The Isle de Leon is separated from the mainland by the *Rio de Santi Petri*, which is too wide and deep to be forded, but is crossed by the bridge of Suazo, which is defended by formidable works, close by *San Fernando* or *Isle de Leon*, a town with 18,000 inhabitants, a fine observatory, and a marine school. To the northward is the new town of *San Carlos*, and a little farther, at the northern end of the river or strait of Santi Petri, is the great naval arsenal of *La Caracca*, now almost deserted, and fast falling to decay. At the southern entrance of the river, in the ocean, is the insulated rock and castle of *Santi Petri*, believed to be the site of the celebrated temple of the Phœnician Hercules. The navigable passage to La Carracca, through the Bay of Cadiz, is commanded by the two forts of *Matagorda* on the mainland, and *Puntales* on the inland. *Puerto Real*, formerly a fine town on the south side of the bay, with a magnificent harbour, a careening basin for ships of war, extensive salines and flourishing fisheries, is now almost in ruins. The other remarkable places in the neighbourhood of Cadiz are:—*San Lucar de Barrameda*, at the mouth of the Guadalquivir, with considerable cotton spinning-works, tanneries, manufactories of liqueurs, fisheries, and 17,000 inhabitants; *Medina Sidonia*, with 9000 inhabitants; *Chiclana*, charmingly situate on a hill, and the great resort of the people of Cadiz in summer.—Population 7000. *Tejer*, a small town on the summit of the hills, terminating at *Cape Trafalgar*, off which the combined fleets of France and Spain were completely defeated by the British fleet under Lord Nelson, 21st October 1805. *Rota*, a small town north of Cadiz, is noted for wine; *Conil*, for its rich fisheries; and *Torre Barrosa* (the clay or mud tower) on the coast, 16 miles S.S.W. of Cadiz, where a battle was fought in 1811 between the British and French. At the southern extremity of Andalusia are the towns of Algeziras, Tarifa, San Roque, and Gibraltar. *Algeziras* is a small town on the west side of the bay of Gibraltar, deriving its name from a small island off the shore. *Tarifa*, a fortified town at the southern extremity of Europe, on the Strait of Gibraltar, at its narrowest part, where it is only 12 miles across. *San Roque*, a small fortified town, serving as a sort of guard-house upon the approach to Gibraltar, from which it is separated by a low isthmus. *Gibraltar*, an inconsiderable town of 12,000 inhabitants, built upon the west side of the celebrated Mount Calpe, one of the pillars of Hercules, which rises abruptly from the sea to the height of 1439 feet, and is defended at every accessible point by the most formidable batteries. The mountain extends nearly three miles in length from north to south, and three quarters of a mile in its greatest breadth, terminating in the sea at Europa Point, and connected with the mainland by a flat sandy isthmus 1000 yards wide, but only a few feet above the level of the sea. The north and east sides form a line of almost perpendicular precipices, but the south and west sides fall in rugged slopes, with occasional flats or terraces. It derives its name from Tarek, a Moorish General, who first built a fort here in the eighth century. It was recovered from the Moors in 1462 by the Spaniards, from whom in turn it was taken, in 1704, by the English, who have retained it ever since. It is now so completely fortified as to be deemed impregnable, and has always a garrison of about 3000 British troops. The least accessible parts of the mountain are peopled by a colony of monkeys, the only animals of the kind in Europe; they are protected by Government. *Ecija*, 54 miles E.N.E. of Seville, a large town with an industrious population of 35,000. *Ossuna*, 50 miles E. of Seville, noted for its manufactures of hemp, and its situation at the entrance of one of the most fertile valleys of Andalusia.—Population 15,000. *Huelva*, a seaport town, and fishing station, from which Seville and other places are supplied with fish.—Population 8000. *Palos* and *Moguer*, two small seaport towns on the same bay, from the former of which Columbus sailed on his first voyage to discover the new world; 60 miles west of Seville.

CORDOVA or CORDOBA (the Roman CORDUBA), a large ill-built, thinly inhabited, and decayed episcopal city, on the right bank of the Guadalquivir, 73 miles N.E. by E. of Seville. It was once the capital of the Mahometan dominions in Spain, and still retains a splendid monument of their wealth and taste in the great mosque, once reckoned second only to that of Mecca, but now converted into a Christian cathedral. In the year 759, it is said to have contained a population of 300,000 persons, but the number now remaining scarcely exceeds 20,000, who live entirely by agriculture; for, with the exception of a very trifling manufactory of linen, there is no trade of any kind. Situation is the only glory that now remains to Cordova; and that is truly delightful.

Andujar or *Andujar*, a fine town on the Guadalquivir, east of Cordova, with considerable manufactures of earthenware, china, and soap.—Population 10,000. *Bayhen*, 20 miles N.E. by E. of Andujar, is noted for the surrender of a French army, under General Dupont, to the Spaniards, under Castanos, in 1811. *Juen*, an episcopal city, with 19,000 inhabitants, 22 miles S.E. by S. of Andujar. *Baeza*, also an episcopal city with 11,000 inhabitants. *La Carolina*, 30 miles N.E. of Andujar, is a fine clean town, the capital of the German colonies established in the Sierra Morena by the minister Olavides, in 1767, a line of policy which, if followed out, might have proved of the highest importance to Spain; but malevolence and superstition combined to defeat his object of introducing, to any great extent, an industrious and moral population into these wild and lawless districts.

Estremadura.—Badajos, a fortified town on the Guadiana, with 13,000 inhabitants, principally noted for the siege which it sustained in 1811-12, against the British army, who at last took it by storm. At *Albuera* or *Albuhera*, 16 miles S. by E. of Badajos, a sanguinary battle was fought, in 1811, between the British troops, covering the siege, and the French, under Marshal Soult, who endeavoured to raise it. *Olivenca*, a busy and commercial fortified town, with 10,000 inhabitants. *Merida*, an ancient city, of 6000 inhabitants, with numerous remains of Roman and Moorish antiquities, and a fine bridge over the Guadiana. *Caceres*, an ancient but small city, nearly in the centre of the province, with 10,000 inhabitants. *Alcantara* (Arabic, *Al-cant-arat* or *Al-kantrah*, the bridge), a small town, with 3000 inhabitants, noted for a fine Roman bridge over the Tagus, said to have been built in the time of the Emperor Trajan, and kept in good preservation till the late war of independence, when it was blown up to prevent the passage of the French across the river. It also gives name to a renowned order of knighthood. *Plasencia*, a small well-built episcopal city, with several Roman antiquities, and 7000 inhabitants. *Almaraz*, a small town of 1000 inhabitants, with a fine bridge over the Tagus. *Truxillo*, a town of 4000 inhabitants, on an affluent of the Tagus, south-east of Alcantara. *Guadalcanal*, in the south-eastern corner of the province, in a gorge of the Sierra Morena, is noted for a silver mine, which was once very productive.

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* Petition to the Cortes.—*Journal of Statistical Society of London*, I. 352.

Balearic Islands. — PALMA, the capital of the province, a large fortified episcopal city, in Majorca, with a good harbour, a university, and 34,000 inhabitants. *Mahon*, a fortified commercial town in Minorca, the residence of the military governor, with one of the finest natural harbours in Europe. *Ivica*, the capital of the island of the same name, is a small episcopal city.

The CANARY ISLANDS, though usually considered as belonging to Africa, form, nevertheless, one of the provinces of Spain. They are situate on the north-west coast of Africa, about 900 miles from Cadiz, between 27° and 30° N. lat., and 13° and 19° W. long. The principal islands of the group are, *Gran Canaria, Teneriffe, Palma, Gomera, Hierro* or *Ferro, Fuerteventura, Lanzarote, Graciosa, Alegranza, Santa Clara, Lobos, Rocca*. They are all of volcanic formation, hilly and rugged, and their coasts often precipitous. The mountain ridge, *El Cumbre*, in Gran Canaria, is 6,648 feet, *Sancillo*, in the same island, 6,979 feet, and the *Peak of Teneriffe* raises its snow-capt summit to the height of 12,042 feet, above the level of the sea. But the eastern islands of Fuerteventura and Lanzarote are almost as dry and sandy as the neighbouring coast of Africa. Lanzarote is mountainous, volcanic, and has many extinct craters. Fuerteventura is, on the contrary, less mountainous than any of the others. Their principal articles of produce are wine, barilla, and orchilla, which form considerable articles of export. They enjoy a delightful and very equable climate, but are subject occasionally to severe droughts, which, more particularly in the eastern islands, last occasionally for two or three years. The population is said to have amounted, in 1828, to 196,517; by the Government decree of August, 1837, it is estimated at 199,150; but, within these few years, many thousands of the people have emigrated to South America. These islands were known to the ancients as the Fortunate Islands; but were almost forgotten till the fourteenth and fifteenth centuries, when they were re-discovered and conquered by the Spaniards, after a brave resistance on the part of the original possessors, the Guanches, who are now completely extinct, though some of their mummies or dried bodies are still preserved. The principal towns are *Laguna*, 8000 inhabitants, *Santa Cruz*, 9000, and *Orotava*, in Teneriffe; *Ciudad de las Palmas*, in Grand Canary, a large handsome town, with 18,000 inhabitants; *Santa Maria de Betancuria*, in Fuerteventura. *Alegranza*, the north-eastern point of the Canaries, is a small island, consisting of a mass of lava and cinders, rising 939 feet above the sea, and forming a well-defined crater two-thirds of a mile across; the bottom being cultivated for barilla.

The only remaining foreign possessions of Spain are the presidios of *Ceuta, Peñon de Velez, Alhucemas*, and *Melilla*, on the north coast of Africa; *Manilla*, and some other portions of the Philippine islands; with *Cuba* and *Porto Rico*, in the West Indies. *Ceuta* is a fortress on a Peninsula, opposite Gibraltar, with a bad harbour, and 8000 inhabitants. It is the residence of a bishop, and of the governor of the presidios. It is also used as a place of confinement for convict criminals.

KINGDOM OF PORTUGAL.

This state is composed of two kingdoms, PORTUGAL and ALGARVE. The former is believed to have derived its name from a place named *Calé*, beside which there was constructed a harbour called *Puerto de Calé*, afterwards contracted to *Portucale*. This port is now believed to be the city of Oporto, and the original kingdom was confined to the neighbourhood of that place. Don Alonzo, king of Castille and Leon, having conquered this province from the Moors, bestowed it, with his daughter in marriage, upon an illustrious stranger, Don Henriquez, who appears to have been a grandson of the first Duke of Burgundy. His son, Don Alonzo Henriquez, after a great victory over the Moors at Ourique, in 1139, was proclaimed king by his army on the field of battle; and he and his successors ever after renouncing all subjection to the crown of Castille, gradually extended their conquests southward, till the kingdom reached its present limits. *Algarvé* (Arabicé, *Al-garbh*, the west) originally extended from Cape St. Vincent to Almeria in Granada, and comprehended likewise the opposite coast of Africa, on which account the Kings of Portugal used to assume the title of Kings of the Algarves on both sides of the sea, though they never possessed more than a small corner of the African continent.

The existing kingdom of Portugal and Algarve is situate between 36° 55′ and 42° 13′ N. latitude, and 6° 15′ and 80° 55′ W. longitude. Its greatest length is from north to south about 350 miles, and its greatest breadth, 143; its superficial area is about 36,596 square miles. It is bounded on the north by Galicia, on the east by Leon, Estremadura, and Andalusia, and on the west and south by the Atlantic Ocean. It has a coast line of nearly 500 miles. The north coast is at first low, but afterwards becomes rugged and steep; in Beira it becomes again flat, sandy, and marshy; in Estremadura it is in one part steep, in another almost a dead level, and very unsafe; in Alemtejo it is low, and beset with rocks and shallows. At Cape St. Vincent it is high and rocky, but to the eastward it sinks into low sandy downs.

For GENERAL ASPECT, RIVERS, MOUNTAINS, CLIMATE, &c., See *anté* pp. 531–537.

PEOPLE. — The people of Portugal are of the same lineage as the Spaniards, and speak a dialect of the same language; but they cherish a deep-rooted national antipathy to their neighbours, and exhibit in many points a strong contrast to them. "Strip a Spaniard of all his virtues," says the Spanish proverb, "and you make a good Portuguese of him;" but, says Dr. Southey, "I have heard it more truly said, Add hypocrisy to a Spaniard's vices, and you have the Portuguese character." The moral and economical condition of the nation is indeed very low, and there is little prospect of a speedy amendment. The Portuguese are generally a robust, though not an industrious people; they are enterprising and persevering, patient in adversity, excessively attached to their religion and customs, and generally retain a

high sense of loyalty to their sovereign, and of submission to their spiritual superiors. Their language is derived from the Latin, to which it is indebted for a great proportion of words, but these are mixed with many of Arabic and Teutonic origin. In the construction of its sentences it bears some affinity to the Castillian, but the pronunciation is less guttural; and it contains many words that seem peculiar to itself, the origin of which it is difficult to trace, though it is probably to be found among some of the tribes on the coast of Barbary.

In 1798, the population of Portugal was estimated at 3,683,000; in 1801, another estimate made the amount 2,931,930; and in 1836, the estimate was 3,061,684; shewing an increase of only 129,754 in thirty-five years. The population was distributed as stated in the following table:—

District of	Aveiro,	214,610	District of	Lisbon,	436,106
....	Beira,	98,519	....	Lamego,	233,955
....	Bragança,	114,501	....	Leiria,	117,144
....	Braga,	308,576	....	Portalegre,	82,410
....	Castello Branco,	91,444	....	Porto,	239,055
....	Coimbra,	227,080	....	Santarem,	174,480
....	Evora,	77,593	....	Villa Real,	161,430
....	Faro,	29,562	....	Vincenna,	132,003
....	Guarda,	165,461			3,061,684

EDUCATION.—In 1822, the statistics of education were as follows:—The university of Coimbra, founded in 1279, with six faculties, a preparatory college, and attended by 1600 students; 883 elementary schools; 322 Latin schools; 21 Greek and rhetorical schools; and 27 seminaries for theoretical and moral philosophy. The total number of scholars, besides university students, was 31,280. To these are to be added the following establishments:—the marine and royal academy at Oporto; the academy at Lisbon; the Lisbon royal school for engineering, artillery, and drawing; and the military school at Luz, near the capital. At Lisbon there was also a royal college for nobles, and royal schools for the Arabic language, drawing, architecture, and statuary; an institution for instruction in copperplate engraving, an academy for music, and some others. Surgery is taught at the university of Coimbra, and in several royal schools; at St. Joseph's hospital in Lisbon, and in hospitals at Oporto, Elvas, and Chaves. There were also several other academies for instruction in science, geography, Portuguese history, marine affairs, navigation, artillery, fortification; an institution for the encouragement of science and literature at Lisbon; an academy for history and antiquities at Santarem; and an academy for scientific instruction at Thomar. There were seven botanic gardens; twelve museums of natural curiosities, open to the public; twelve collections of coins and other antiquities; eight observatories; a royal library at Lisbon, with 80,000 volumes; and the university library at Coimbra, with 60,000.

RELIGION.—The Portuguese were formerly, without exception, ignorant and bigoted Roman Catholics, addicted to superstition and intolerance; and for many ages the whole nation well deserved the appellation bestowed by the Pope upon their king, of His *Most Faithful* Majesty. Other religions are now tolerated; but no Portuguese has, we believe, been yet known to dissent from the national faith. The supreme head of the clergy is the Patriarch of Lisbon; beside whom there are two archbishops, those of Braga and Evora, and fourteen bishops. In 1822, there were 132 nunneries, with 2980 nuns, and 346 monasteries, containing 5830 monks besides servants, pupils, and novices. But infidelity has now usurped the place of the ignorance and blind devotion by which the Portuguese were specially characterized. By the constitution, no male religious houses are permitted; the regular clergy have been abolished; the monks and friars have been driven from their princely mansions to live on a small allowance, and their estates and revenues have been confiscated to the crown. The secular clergy, the only class now permitted, never had much influence upon the people; and even the little they had is now almost gone.

GOVERNMENT.—The Spanish insurrection, which broke out in the Isle de Leon in 1820, was speedily followed by one in Portugal. An extraordinary Cortes assembled and proclaimed a constitution similar to that which the Spaniards adopted in 1812, but still more democratic; for it admitted only one chamber, elected by universal suffrage, and invested with the whole legislative and a great part of the executive power. Amendments might be suggested by the king upon a law voted by the Cortes; but if the National Assembly confirmed its opinion a second time, it became law without the royal sanction. The king had not the power to prorogue or dissolve the Cortes, which met and separated at fixed periods. Three years afterwards,

an insurrection, headed by Don Miguel, the second son of the King, overturned this new constitution, and in May 1823, his father, Don John VI., protested against all that had been done while it prevailed. After the death of John, in 1826, his eldest son and heir, Don Pedro, Emperor of Brazil, abdicated the crown of Portugal in favour of his daughter Donna Maria da Gloria, and gave to the Portuguese a charter which re-established the ancient Cortes. According to this act, the legislative power is vested in the King and the Cortes, who are divided into two chambers; the chamber of the Peers, named by a king, who are unlimited in number, and whose dignity is hereditary or for life; and the chamber of Deputies, elected for periods of four years, by provincial electors, who are themselves named by the primary assemblies of parishes. In 1828, Don Miguel, whom his brother had appointed regent during the Queen's minority, usurped the throne, and proclaimed himself absolute king; but Don Pedro, who had been obliged to abdicate the throne of Brazil, invaded Portugal in 1833, recovered the kingdom for his daughter, and restored the constitution of 1826. This, however, lasted only till September 1836, when the garrison and national guard of Lisbon proclaimed the constitution of 1820, which they compelled the Queen to accept, with only such changes as the Cortes might think proper to make. Portugal is thus a very limited monarchy, or to speak more correctly, a democratic representative republic, with an hereditary chief magistrate, possessing very limited powers, and exercising the functions of royalty only by and with the counsel of responsible ministers.

PRODUCTIVE INDUSTRY.— Portugal is behind almost every other nation of Europe in agriculture; and the various improvements which are elsewhere general have been here slowly and but recently introduced. The districts best cultivated are the valleys of the Minho, those of the Oporto wine company along the Upper Douro, and some parts of Tras os Montes and Beira; the rest of the kingdom remains comparatively uncultivated. Where the soil is subjected to proper culture, abundant crops of wheat, barley, maize, rice, and rye are produced; but they are not sufficient to supply the consumption. Artificial meadows are almost unknown, except in Minho. The cultivation of the soil, however, has of late rapidly extended, and hemp and flax are raised of excellent quality. Wine is produced in great abundance, chiefly in the northern provinces; the quantity usually made is about 80,000 pipes of red, and 60,000 pipes of white. Chestnuts, almonds, oranges, lemons, and citrons are also profusely raised, and, with onions and garlic, form no small proportion of the food of the people. Olive-trees are plentiful, and their oil forms an important article for home consumption, and is exported to a considerable extent.

Mines appear to have been wrought by the Carthaginians in this part of the Peninsula; and mines of gold and silver were wrought by the Romans. During the last century, lead ores were worked near Mogadouro, in Tras os Montes, and in the vicinity of Longroiva on the banks of the Rio Prisco. In 1628, a silver mine was wrought in Tras os Montes. Mines of Plumbago occur near Mogadouro, and iron mines in the same country near Figueira and Torre de Moncorvo; from which the iron forge of Chapacunha is supplied. In Estremadura there are two very old establishments of the same kind, one near Thomar, and the other near Figuero dos Vinhos. On the frontier of that province and of Beira are situate the mines of red oxide of iron, from which these articles are supplied. Iron, indeed, is one of the most abundant minerals in Portugal. The mountains near Oporto everywhere give indications of copper and other ores, and at Couna is a deposit of cinnabar. There are also in different places mines of antimony, bismuth, and arsenic. The sands of some of the rivers are washed for the gold which they contain, and it is said that in this way large quantities have been collected; but none of the streams now yield a quantity much above the value of the labour expended in collecting it. There is only one gold mine, that of Adissa, near Setubal, the annual produce of which does not exceed the average of twenty pounds weight. There are two coal mines; one near Figueira, and the other near Oporto. The country abounds with the most beautiful marbles, but they are little wrought, on account of the expense of bringing them to market. Precious stones are also found. There are quarries of limestone, gypsum, slate, freestone, millstone, and black agate in various parts of the kingdom; and immense beds of pyrites and marcasites, potters' and common clay, and salt-pits are met with. But neither the mines nor the fisheries are carefully attended to. If the former were wrought, their produce might form important articles of trade; and the capabilities of the latter, if brought into operation, would render the importation of fish unnecessary.

The *manufactures* of Portugal are comparatively unimportant, but the country has

in this respect been generally underrated. Cottons are manufactured at Alcobaça and Thomar; woollens, at Guarda; and linens, at Guimaraens. The best goods made in the kingdom, as compared with those of other countries, are the cambrics, shirting and table linens, and sewing threads. Glass is manufactured at Leiria; and silk, paper, and other articles elsewhere. In Lisbon there are manufactories of arms, cordage, hats, chocolate, earthenware, tin, copper, lace, mats, ribbands, soap, silk, cottons, with distilleries, tanneries, sugar-refineries, and foundries. The Portuguese display considerable skill in working in gold and silver; and their taste in cabinet work is said to be now much improved. Generally speaking, they manufacture most articles of ordinary necessity with more or less skill.

The separation of Brazil from Portugal, together with the loss of her Indian possessions, have reduced the commerce of this country to a mere fraction of what it was, when her ports were the medium through which much of the produce of the East and the West passed to other countries. Political events have also materially contributed to depress her foreign trade. Till 1820, it was still very considerable; but since that time it has sunk into comparative insignificance. The chief articles of export are wine, lemons, oranges, figs, almonds and other dried fruits, salt, oil, sumach, wool, and cork. The chief imports consist of wheat and other grain, dried cod, salt-meat, butter, cheese, horses, beeves, mules, and other animals; medicinal drugs and dye-stuffs, linseed-oil, planks and other kinds of prepared wood, iron, steel, lead, tin, brass, copper, charcoal, tar, pitch, flax, hemp, and silk. The internal trade, which at the best is unimportant, suffers from the want of good roads. Canals are unknown, and the few navigable rivers are liable to interruptions; so that until proper roads are made, or canals formed, the inland commerce must continue to be very limited.

ADMINISTRATIVE DIVISIONS.—According to the project of a new territorial division of the kingdom, adopted by the Cortes in 1823, Portugal, with the Açores and Madeira, were to be divided into twelve provinces, containing twenty-six comarcas, or shires, and each subdivided into several julgados, or cantons; but the subsequent troubles have prevented this arrangement from being carried into effect. The six great provinces whose names appear in maps, are not administrative, ecclesiastical, or military, but simply geographical or popular divisions, and it is as such only that we give them here with their principal towns, as stated in the following table:

Provinces.	*Cities and Towns.*
ESTREMADURA, . .	LISBOA (LISBON), 260,000; Torres Vedras, 3400; Castanheira, 700; Alemquer, 2600; Leiria, 2000; Alcobaça, 1300; Thomar, 3700; Ourem, 3100; Chao de Couce, 1300; Santarem, 7800; Setubal, 14,800; Oeiras, Campo Grande, Bemfica, Bellas, Cascaes, Queluz, Mafra, 3000; Ericeira, Villa-franca, 4600; Alhandra, Caldas, Chamusca, 3000; Cintra, 3700; Batalha, Peniche, Pombal, 4800; Pedrneira, San Martinho, Pedregao-grande, Abrantes, 5000; Sardoal, Porto de Moz, Aguda, Gollegan, Torres Novas, 4200; Salvaterra de Magos, Cezimbra, 4200; Almada, 4200; Aldeagallega, 3500; Alcacer do Sal.
ALEMTEJO, ...	Evora, 10,000; Beja, 5400; Ourique, 2400; Villa Viçosa, 3300; Elvas, 10,000; Portalegre, 6100; Crato, 1200; Aviz, 1400; Estremos, 5300; Montemor o Novo, Moura, 3400; Serpa, 4600; Cuba, Messejana, Odemira, Mertola, Villa nova de mil Fontes, Portel, Alterdo Chao, Campo maior, 4500; Mourao, Castello de Vide, 5700; Marvao, Niza, Sartao, 3300; Benavente, Coruche, Jerumenha.
BEIRA, ...	Coimbra, 15,000; Arganil, Aveiro, 4100; Feira, 1600; Viseu, 9200; Lamego, 8900; Pinhel, 1700; Trancoso, 1200; Guarda, 2400; Linhares, Castello Branco, 5700; Figueira, 6400; Miranda do Corvo, 3900; Louzan, Penella, Goes, Mira, 6000; Ilhavo, 7300; Souza, Ovar, 10,400; Oliveira do Azemeis, Penalva, San Joao de Arcos, Oliveira do Conde, Arouca, 5500; San Martinho dos Mouros, 4800; Priva, 6600; Arnellas, Almeida, San Joao de Pesqueira, Covilhan, 6400; Monteigas, Celorico, Fundao, Fornos, Monsanto, Sarzedas.
MINHO OR ENTRE DOURO E MINHO,	Braga, 14,400; Porto, 70,000; Penafiel, 23000; Guimaraens, 6000; Viana, 8000; Barcellos; 3500; Valença, 1600; Tibaes, Prado, 6500; San Joao da Foz, 3300; Povoa del Varzim, 5700; Pedrozo, 3500; Canavezes, Amarante, Caldas do Geres, Ponte de Lima, Santa Martha do Douro, Espozende, Villa do Conde, 3100; Eixo, 3100; Caminha.
TRAS OS MONTES, .	Miranda, 600; Moncorvo, 1600; Villa-real, 4000; Bragança, 3700; Vimioso, Mirandella, Santa Martha de Penaguido, Peso da Regoa, Chaves, 5200; Montalegre.
ALGARVE, ...	Faro, 8400; Tavira, 8600; Lagos, 6800; Silves, Lagoa or Alagoa, 3000; Loule, 8200; Castro-marim, Villa-real, Villa nova de Portimao, 3260; Albufeira, Monchique, Sagres.

1. *Estremadura.*—LISBOA (LISBON), the capital of the kingdom, is a large straggling city, built on several hills with the interjacent valleys, on the right bank of the estuary of the Tagus. The newest part of the city, which occupies the site of the buildings destroyed by the earthquake in 1755, is laid out in regular streets which cross each other at right angles, and are lined with good houses, and contains two large open squares, the Praça do Rocio, and the Praça do Commercio, the latter having its south side open to the river, its other three sides being occupied by the exchange, the custom-house, the India house, the intendancy of the marine, the royal library, and other establishments, with a bronze equestrian statue of King Joseph I. in the centre. The Praça do Rocio contains the palace and prisons of the Inquisition, now used as the offices of the ministry, and a great number of elegant

shops and coffee-houses. The greater part of the rest of the city consists of narrow, winding, dirty streets. The public buildings present little that is interesting or attractive. Of the 246 churches only 3 are deserving of notice, the cathedral or basilica of Santa Maria, San Roque, and the church of the Coraçao de Jesus, noted for the boldness of its dome. There are three royal palaces, the Ajuda, a regular building which, when finished, will be one of the largest in Europe; the Bemposta, only used for public audiences: and that of Necessidades, where foreign princes are lodged. The residences of the nobility are also very splendid; and some of the richer merchants have houses, which, in appearance, rival those of the higher orders; but the habitations of the lower classes are miserable, and disgusting from their extreme filth. Lisbon possesses an academy of sciences, of considerable repute, a botanic garden, a cabinet of natural history, several large libraries, of which that belonging to the sovereign contains 80,000 volumes, a college for nobles, and several other seminaries. Among other charitable institutions, there is an hospital where the sick of all countries are freely admitted and relieved. The climate is remarkably salubrious, and is resorted to by invalids from northern countries for relief in pulmonary complaints. The markets are profusely supplied. The consumption of animal food is small; fish is abundant and cheap; fruit of every kind, and flour of excellent quality, are easily to be had; and garlic, one of the principal articles of consumption, is furnished in prodigious quantities. The city is profusely supplied with water by the aqueduct of Bemfica, or Agoas livres, upwards of 10 miles in length, which was completed in 1732, after nineteen years' labour, and which will bear a comparison with the greatest Roman works of the kind. The water, which is brought from Montelavar, is strongly impregnated with carbonate of lime, and is thought to be beneficial to invalids. There are few people occupied in manufactures. Some fine woollen cloths are made, some of linen, and a considerable quantity of silk goods. The greatest artistic taste is displayed in jewellery, and the goldsmiths and silversmiths are excellent workmen. The foreign trade is second to that of no city of Europe except London; but we have no authentic accounts of its nature, amount, and value. The domestic productions of Portugal are exported to all the northern countries of Europe, more especially to England; and articles from every country are received in return, partly for home consumption, but chiefly for re-exportation to the Portuguese colonies. The Tagus, above the city, expands into a wide estuary, and forms a most secure and capacious harbour, capable of containing 10,000 sail without danger; but for a space of 5 miles below the city it contracts its breadth to less than a mile, and the bar at the entrance is dangerous to be passed without the aid of skilful pilots. Between the bar and the city, the fort of St. Julian and the strong castle of Belem, in the river, under whose guns all ships must pass, form its principal military defences. Few finer objects can be seen than a panoramic view from the harbour. The smooth expanse of water studded with ships, the vineyards on the surrounding hills, and the straggling city extending 2 miles along the shore, afford a view which can scarcely be equalled.

In the neighbourhood of Lisbon are several places worthy of particular notice. On the banks of the Tagus, 5 miles S.W. from the centre of the city, is the magnificent church and monastery of *Belem*, built by King Emanuel in 1499, on the spot from which Vasco da Gama embarked for India. It is a noble gothic building, and contains the tombs of many members of the royal family. *Cintra*, 15 miles W. by N. of Lisbon, a small town in a beautiful and picturesque situation, with a delightful climate, is memorable for the convention made there in 1808, by which the French, under Marshal Junot, were allowed to evacuate Portugal. *Mafra*, 9 miles N. of Cintra, is noted for a superb basilica or cathedral, an extensive convent, and a magnificent royal palace, the finest building in Portugal, and one of the finest in Europe, all founded by King John V. *Queluz*, a royal chateau, with no other inhabitants than those attached to the Court, 7 miles W. of Lisbon. *Bellas*, north of Queluz, a fine country town with a villa of the Marquis de Bellas, with a population of 3400, where are chalybeate springs. *Campo-grande*, a small place of 1300 inhabitants, noted for its great silk-works; the ordinary resort of the gentlemen and ladies of Lisbon, particularly on Sundays, for riding. *Alhandra*, a small town with 2000 inhabitants, who make a great quantity of linen, and the bricks which are used in the buildings of Lisbon.

The other places in Estremadura are:—*Caldas da Rainha*, a town with 1300 permanent inhabitants, 47 miles N. of Lisbon, with well-frequented sulphureous baths. A few miles to the south of Caldas are *Roliça* and *Vimiera*, where the first battle between the British and the French armies was fought in August 1808. *Leiria*, a small episcopal city, near which is the village of *Marinha-grande*, with a superb glass-work, which supplies the greater part of Portugal and its colonies with that article. *Batalha*, 70 miles N. by E. of Lisbon, is noted for a magnificent convent, reckoned one of the finest specimens of the Norman-gothic style. *Alcobaça*, 60 miles N. by E. of Lisbon, has a celebrated abbey of the order of Citeaux. South-west of Alcobaça is *Aljubarota*, where the independence of Portugal was established by a victory gained by John I. over the Spaniards, in 1385. *Peniche*, a fortress on the neck of the promontory of Cape Carvoeiro. *Thomar*, 70 miles N.E. of Lisbon, noted for an extensive convent, the residence of the grand master of the order of Christ, and for its manufacture of cotton thread. *Abrantes*, on the right bank of the Tagus, 75 miles N.E. of Lisbon, a considerable town, on a rising ground, commanding the passage of the river, over which there is a bridge of boats. It also contains the church of St. Vincent, one of the largest and finest in the kingdom. *Santarem* (St. Irené), a large fortified town, on a hill which rises almost perpendicularly, and, towering above the plain, presents a position of impregnable strength, on the right of the Tagus, 48 miles N.E. by N. of Lisbon. The distant view is very grand, and the splendour of its numerous churches, monasteries, and convents, is proverbial. *Salvaterra de Magos*, a small town with a royal chateau. *Torres Vedras* (old towers), 26 miles N. by W. of Lisbon, on the river Zizambre, has given its name to a celebrated line of entrenchments, forts, and field-works, constructed in 1811, between the Tagus and the sea, to cover the approach to Lisbon against the French invaders. It also gives the title of Marquis to the Duke of Wellington. *Sobral*, a small town, 9 miles E. of Torres Vedras. All these places are on the right bank of the Tagus, to the north and north-east of Lisbon. To the south of the river are, *Setubal* (St. Ubes), a large sea-port town, 16 miles S.S.E. of Lisbon, containing five churches, eleven monasteries, and about 12,000 inhabitants, on the estuary of the rivers Sado and Maroteca, which forms a fine harbour. It exports wine and oranges, and numerous salines produce great quantities of salt. In the Sierra de *Arrabida*, six miles W. of Setubal, is the celebrated convent of our Lady of Arrabida, containing a miraculous image of the Virgin, which attracts more visitors than all the wild and splendid scenery of the hills. *Cezimbra*, a small town on the same coast, with a harbour, and 4000 inhabitants, who live chiefly by fishing. *Almada*, near the Tagus, S.W. of Lisbon, a large village, with 4000 inhabitants. In the vicinity is the gold mine of Adissa. *Aldeagallega*, a town of 4000 inhabitants, mostly fishermen and mariners, is the ordinary ferry station between Lisbon and Alemtejo.

2. *Alemtejo.*—EVORA, an archiepiscopal city 82 miles E. of Lisbon, only noted for its Roman antiquities, among which are an aqueduct in good preservation, and a temple of Diana.—Population 9000. At *Estremos*, 22 miles N.E. of Evora, is a great manufacture of earthen vases, which, on account of their great porosity, are used throughout Portugal and great part of Spain, for cooling water. *Elvas*, 40 miles E.N.E. of Evora, and 12 miles W. of Badajos, a large episcopal city, the strongest place in the kingdom, and one of the principal fortresses in Europe. *Beja*, a small episcopal city, with several Roman antiquities, 40 miles S. of Evora. Between 20 and 35 miles S.W. of Beja is the *Cumvo de Ourique*, where Don Alonzo Henriquez was proclaimed King of Portugal by

his army, after a great victory over the Moors, in A.D. 1139. *Serpa*, 20 miles E.S.E. of Beja, a considerable town, the inhabitants of which carry on a large contraband trade with Spain. *Villa Viçosa*, 23 miles N.E. by E. of Evora, a small town with a royal palace, and a walled park 10 miles in circuit. *Portalegre*, 70 miles N.N.E. of Evora, an episcopal city, with a considerable manufacture of cloth. To the north-east is the small town of *Marvao*, noted for its fortifications, and for some antiquities lately discovered.

3. *Beira*.—COIMBRA, a large episcopal city on the right bank of the Mondego, 112 miles N.N.E. of Lisbon, built partly on the western side of a steep rocky hill, and partly on a plain contiguous to the river. This city contains the only university of the kingdom, and is the seat of the general directory of public instruction, and of a considerable inland trade. Population 15,000. *Figueira*, a seaport town with considerable trade at the mouth of the Mondego. *Aveiro*, a small episcopal city, 35 miles N.N.W. of Coimbra, formerly an important seaport, and now recovering its ancient prosperity, in consequence of the great labour expended in draining the marshes in its neighbourhood, and in restoring its harbour. *Oliveira*, a large commercial town, at the northern end of the great gulf or inlet of Aveiro. *Viseu* or *Vizeu*, an episcopal city 48 miles N. of Coimbra, noted for a great annual fair for jewellery and plate, cloth, and cattle. *Lamego*, about 5 miles from the left bank of the Douro, an episcopal city in which the Cortes assembled in the year 1144 to establish the constitution of the kingdom. *Covilhan*, a large town at the foot of the Sierra d'Estrella, with fine woollen manufactures, and a literary society. *Almeida*, a fortified town near the frontier, 24 miles W. by N. of Ciudad Rodrigo, in Spain. It has always been deemed a military post of the greatest importance.

4. *Minho*.—PORTO OPORTO, a large episcopal city and seaport town in a delightful situation, on the slopes of two hills along the right bank of the Douro, three miles from its mouth. The town is very irregular and straggling, but is second only to Lisbon in the industry of its inhabitants, and in commercial importance; the principal trade consists in wine, both white and red, but chiefly the latter, which is made in this province, and also in Tras os Montes, and exported to the amount of 50,000 to 70,000 pipes a-year. It has also manufactures of hats, silks, linen, and pottery, with ropewalks and ship-yards. The climate is damp and foggy in winter; and the air is then cooler than anywhere else in Portugal, but it seldom freezes. In summer the heat is excessive; most of the plants of Southern Africa grow in the open air, as well as gooseberries, currants, and other fruits of the colder climates of Europe. The river affords a tolerably secure harbour, and is lined by a quay along the whole length of the town. Its mouth is obstructed by rocks and quicksands, which render entrance difficult, but the water is very deep in front of the town. Oporto has 4 suburbs, 11 campos or squares, 14 hospitals or asylums, 90 churches, besides a fine and spacious cathedral rebuilt by Henriquez, first Count of Portugal, A.D. 1105; and 17 monasterics, now uninhabited. On the south side of the river, which is crossed by a bridge of boats, is the *Villa-nova de Gaya*, chiefly inhabited by wine-coopers, and containing the immense vaults or lodges where the wine is kept till it is stored. On a rocky eminence above Villa-nova is the vast convent and garden of Serra Cruzios, near which the British army crossed the Douro in 1809. The city, including Villa-nova, and all its suburbs, contains probably about 70,000 inhabitants. *Braga*, a very ancient archiepiscopal city, with an ancient cathedral, the remains of a temple, an amphitheatre, an aqueduct, and other Roman antiquities, and an industrious commercial population, 30 miles N. by E. of Porto. *Guimaraens*, south-east of Braga, a large flourishing town, with manufactures of cutlery, linen, &c., was the first capital of the kingdom. *Caldas do Gerez*, noted for its well-frequented mineral baths, north-east of Braga. *Vianna*, a large seaport town at the mouth of the Lima, with considerable trade, and flourishing fisheries.

5. *Tras os Montes*.—VILLA-REAL, a large, busy, and commercial town, 50 miles N.E. of Oporto. *Peso da Regoa*, near the right bank of the Douro, south of Villa-real, a small town with a celebrated wine-fair, held every year in February, where business is done to the value of £1,500,000 sterling. *Bragança*, an episcopal city, with important silk manufactures, in the north-east quarter of the province, gives the title of duke and a sort of family name to the existing royal dynasty. *Chaves*, near the northern frontier, has been frequented for its mineral waters since the time of the Romans, and has a bridge built by them.

6. *Algarve*.—FARO, an episcopal and commercial city, with 8000 inhabitants, who are chiefly employed in the fisheries. *Tavira*, a large seaport town, with 9000 inhabitants, mostly employed in fisheries. *Villa-real*, a fine town, built in 1774 by the Marquis de Pombal, on a regular plan, with a harbour at the mouth of the Guadiana. *Monchique*, a small town, 30 miles N.E. of Cape St. Vincent, in a romantic situation, with well-frequented mineral baths. *Sagres*, a small fortified town, near Cape St. Vincent. It was here that the Infant Don Henriquez, Duke of Viseu, resided for many years, to prosecute those voyages along the coasts of Africa, which have rendered his name illustrious as the father of modern maritime discovery.

The *foreign possessions* of Portugal consist of:—1. The *Açores*; 3. *Madeira* and *Porto Santo*; 3. The *Cape Verde Islands*, on the west coast of Africa; 4. *Angola*, *Moçambico*, and other territories in southern Africa, *Goa*, *Diu*, and other settlements in the East Indies.

The AÇORES, or WESTERN ISLANDS, are situate in the Atlantic Ocean, between 37° and 39° north latitude, and 25° and 31° west longitude. They are nine in number, named *Santo Miguel* (*St. Michael's*), *Terceira*, *Pico*, *Fayal*, *Santo Jorje*, *Graciosa*, *Santa Maria*, *Flores*, and *Corvo*, all of volcanic formation, of a rugged rocky surface, and producing abundance of wine and fruits. SAN MIGUEL, 50 miles in length, and varying in breadth from 6 to 10 miles, rises in many parts precipitously from the water, but in others its elevation is very gradual. The more level parts are dotted with hundreds of small hills, many of which are perfect cones, while others are truncated or terminate in crater-shaped tops. The lower parts of the island are cultivated, and exhibit extended fields of Indian corn, wheat, and culinary vegetables. Houses and villages are scattered all along the coast, intermixed with vineyards and orange gardens.—Population, about 80,000. The chief town of the island is *Ponta Delgada*, on the south coast, a well-built town, with 16,000 inhabitants, but possessing a bad harbour, though the best in the island. It contains an English church and burying-ground. *Ribiera-grande*, on the north side of the island, is also a flourishing town, with 12,000 inhabitants. In 1811, a volcanic island rose from the sea, off the west end of St. Michael's, to the height of 300 feet, but disappeared four months after. TERCEIRA is a large compact island, to the west of St. Michael's, and contains the capital of these islands. *Angra*, an episcopal city, with 13,000 inhabitants, a military academy, and other literary establishments. *Horta*, in Fayal, is a large town with 10,000 inhabitants, and the best harbour in the group, the most frequented after those of Angra and Ponta Delgada. *Lagens* in Pico is a small town, but noted for its excellent wine. In its vicinity rises the great *Pico*, or snow-capped volcanic cone, to the height of 6900 or even 7000 feet above the level of the sea. The other islands are in no way remarkable. The total population has been estimated at 250,500, thus distributed:—Santo Miguel, 80,000; Terceira, 40,000; Pico, 24,000; Fayal, 22,000; Floras, 14,000; Santo Jorje, 10,000; Graciosa, 7800; Santa Maria, 5000; Corvo, 7000.

MADEIRA is situate off the north-west coast of Africa, in north lat. 32° 30', and west long. 17°; 35 miles in length, and 10 or 12 broad. It rises, for the most part, abruptly from the Atlantic, and the interior forms a huge mountain mass, interspersed with numerous chasms and precipices, many of which are frightful and inaccessible. The island is liberally supplied with rivulets and cascades, which leap

from rock to rock, through bushes of rosmary, jessamine, laurel, and myrtle. Groves of chestnuts and pine-trees stretch along the declivities of the mountains; the large leaves of the banana wave over the walls, and the splendid palm-trees overtop the houses. Coffee-trees form hedges and copses; while mimosas, protea, and a variety of the most gorgeous and fragant palms rise into tall and stately trees, displaying their far glittering blossoms in the most delightful climate. The air is filled with perfume, and thousands of birds warble in the woods. The uniformity of the temperature is remarkable; the average range of the thermometer is from 68° to 76° Fahrenheit during summer, and from 57° to 65° in winter; the mean annual temperature being 66°. But every desirable degree of temperature can be enjoyed with the corresponding changes of vegetation, on the acclivities of the Pico Ruivo, which raises its snow-capt summit in the centre of the island to the height of 5488, or, according to others, 6165 feet above the level of the sea. Madeira has long been the resort of invalids, especially of consumptive patients. The best season for them is from November to the middle of June. In July, August, and September, the heat sometimes becomes excessive, and the influence of the sirocco has been known to raise the temperature to 130°, a heat sufficient to melt wax. The winters too are sometimes stormy and uncomfortable. The geological structure of the island is likewise an insuperable obstacle to the making of good roads, so that the invalid cannot have the benefit of riding. *Funchal*, the capital, is a large town on the south side of the island, with 25,000 inhabitants; the population of the whole island is estimated at 120,000. The principal produce is wine. Madeira is chiefly composed of volcanic products. About 35 miles north-east is the small island of *Porto Santo*, which consists of tertiary sandstone and limestone, alternating with volcanic strata; and to the south-east of Madeira are some small rocky islets named the *Dezertas*.

ITALY.

ASTRONOMICAL POSITION. — Between 36° and 47° north latitude, and 5° and 19° east longitude.

DIMENSIONS. — Italy consists of two distinct portions, the continental and the insular; the latter including the three large islands of Sicily, Sardinia, and Corsica, with the smaller islands of Malta, Gozo, Comino, and others. The continental portion forms a long narrow peninsula extending from N.W. to S.E., of which the greatest length, from the sources of the river Tosa to Cape Cimiti in Calabria, or Cape Leuca in Otranto, measures about 695 or 700 miles. The breadth is very various; in the north, from the western border of Savoy to the eastern border of Friuli, it measures 365 miles; from Mont Genevre to the mouth of the Po, through the middle of Lombardy, about 275; from the coast of Lucca to the coast of Ravenna, 105; from Piombino to Ancona, 156; from the Gulf of Naples to the Gulf of Manfredonia, 98; and, in some parts of Calabria and Otranto, it does not exceed 20 miles. The superficial area, including the islands, is computed at 122,867 square English miles.

BOUNDARIES. — *Northern:* — Switzerland, Tyrol, Styria, Carinthia, and Carniola. *Western* and *South-western:* — France and the Mediterranean Sea. *Eastern* and *North-eastern:* — the Adriatic Sea, or Gulf of Venice. *South-eastern:* — the Ionian Sea.

GENERAL ASPECT. — The northern border of Italy proper is formed by the stupendous range of the Alps, which extend in a long curve line from the shores of the Mediterranean Sea near Genoa, to the head of the Adriatic. At their southern extremity the Alps are connected with the Apennines, an inferior but still important range, which stretches in a continuous line, parallel to the shores of the Gulf of Genoa, and then through the peninsular part of Italy to the Strait of Messina, dividing the country into two narrow sections of lowland, which extend from the mountains to the adjacent seas. Between the Alps and the Apennines, in Northern Italy, lies the great plain of Lombardy, which is traversed throughout its whole length by the Po, and is watered by innumerable streams which pour down from the adjacent mountains. The length of this plain is about 250 miles from east to west, with an average breadth of 50. Its western portion, at the mouth of the Ticino, has an elevation of about 300 feet above the level of the sea, but it gradually sinks towards the east, and terminates in a low sandy shore. It is thus nearly a dead flat, is of great fertility and well cultivated. Both of the mountain ranges by which it is bordered, rise from the plain with a steep acclivity, and inclose among their branches and offsets many fine valleys, some of which contain large lakes that serve as reservoirs for the water which is turned to account in irrigating the country. The Apennines, in their progress southward, and along the Gulf of Genoa, inclose many narrow but not very fertile valleys; farther south, however, their branches do not always reach the sea, but leave in some places spacious plains, such as the Tuscan and Roman *Maremme*, a singular tract with an undulating surface, which extends along the Mediterranean from Pisa to Terracina, about 200 miles in length, and of various breadth; the *Tavogliera de la Puglia*, which is a wide plain destitute of trees, and of very indifferent fertility; and the volcanic region of *Terra de Lavora*, one of the most fertile districts in the world.

GULFS, BAYS, STRAITS. On the west coast: — *Gulf of Genoa; Gulf of Spezzia*, at the eastern extremity of the Riviera de Levante of Genoa, extends 7 miles inland, forming one of the finest harbours in the world, and of the most exquisite beauty. There is in the midst of this gulf a spring of fresh water rising from the bottom of the sea. *Channel of Piombino*, between Piombino and the island of Elba, the *Strait of Bonifacio*, between Corsica and Sardinia; the *Gulfs of Gaeta, Naples, Salerno, Policastro*, and *St. Eufemia*, on the coast of Naples; and the *Faro* or *Strait of Messina*, between Naples and Sicily. Captain Smyth ascertained the width of this strait at four different places; namely, from Ganziri to Point Pezzo, the shortest distance, 3970 yards; from Messina lighthouse to Point del Orso, 5427; from Faro Point to the Castle of Scilla, 6047; and from Messina lighthouse to the cathedral of Reggio, 13,187. The currents in the strait are numerous and varied. In settled weather there is a central stream which runs alternately north and south, six hours each way, at the rate of from 2 to 5 miles an hour. On each shore there is a counter or returning stream at uncertain distances from the beach, often forming eddies to the central current; but in very fresh breezes, the lateral tides are scarcely perceptible, while the main stream increases, so as to send at intervals slight whirlpools to each shore; but though in light breezes the current may be so strong as to turn a

ship round, there is no real danger; and the proverbial terrrors of the ancients, of passing between Scylla and Charybdis, would appear to have been almost quite imaginary. The celebrated Charybdis, now called Galofaro, is close by the harbour of Messina, and is an agitated water from 70 to 90 fathoms deep, circling in quick eddies, which seem to be caused by the meeting of the harbour and other lateral currents with the main stream. Small craft are sometimes endangered by it, and ships of war wheeled round upon its surface, but with caution there is very little danger or inconvenience attending it. There is a curious aerial phenomenon observed occasionally in this strait, called the *Fata Morgana* by the Sicilians, who believe that it is produced by the fairies. It is a species of mirage, occasioned by a peculiar state of the atmosphere, during which from certain situations the opposite coast is seen pictured in curious forms, as if upon an aerial screen. On the south-east coast:—the *Gulfs of Taranto* and *Squillace*; and the east coast, the *Gulf of Manfredonia*, in the Adriatic Sea.

CAPES.—*Monte d'Argentaro, Cape Linaro, Cape d'Anzo, Monte Circello, Miseno, Campanella, Point Licosa, Cape Vatiano*, all on the west coast; *Spartivento, Stilo, Rizzuto, Cimiti, Nau, Leuca*, on the south-east coast; *Rasocolmo, Rama, San Vito, Fero, San Marco, Bianco, Scalambri, Ciarciaro, Passaro*, in Sicily; *Carbonara, Ferrato, San Lorenzo, Palmeri, Sierra Carallo, Bellavista, Monte Santo, Negra, Comino, Codacarallo, Libano, Falcone, Negretto, Caccia, Maraggio, Mannu, Frasco, Pecora, Giordanu, Tenlada, Spartivento, Pula*, all in Sardinia; *Corso, Scandolo, Fieno, Tizzano*, in Corsica.

ISLANDS.—*Sicily; Sardinia; Corsica; Malta, Gozo, Comino, Gorgona*, a small island, 23 miles W. by S. of Leghorn, covered with wood, which serves as a station for the sardel fishermen, and is famous for anchovies. *Capraia*, 20 miles E. of Cape Corso, a small calcareous island, belonging to the King of Sardinia. *Elba*, a large triangular island, 10 miles long, and 3 broad, off the coast of Tuscany, which has been famous, from the most remote antiquity, for its iron mines, which are still wrought. It contains also marble quarries, and produces corn, wine, oil, apples, pears, peaches, prunes, cherries, chestnuts, oranges, and lemons. Population, about 12,000; the principal towns are *Porto Ferrajo*, with 3000 inhabitants; *Porto Longone*, 1500; *Rio*, 2000; and *Marciana*, 1200.—*Pianosa, Monte Christo, Giglio, Giannuti*, small islands to the south of Elba. Giglio contains quarries of granite and valuable marbles; the hills are covered with trees, and the land is fruitful in wine. The *Pontian Islands* of *San Stefano, Vandotena, Zannone, Ponza*, and *Palmarola*, a volcanic group off the Gulf of Gaeta. *Ponza*, the largest, is about 6 or 7 miles long, and 3 broad. *Ischia, Procida*, and *Vivara* islands of volcanic formation, at the north-western extremity of the Gulf of Naples. Ischia is about 5½ miles long, and Monte Epomeo, in the centre, rises to the height of 2513 feet. The island consists of one large and several smaller hills, has many hot springs, and produces figs, oranges, pomegranates, chestnuts, and aloes. Monte Epomeo was formerly a volcano, of which a dreadful eruption is recorded in 1301. The town is on the eastern side of the island, is well fortified, and protected by a strong citadel connected with it by a stone bridge, 400 yards in length, near to which vessels may anchor securely in 3 or 4 fathoms water, fastened to the shore. Procida and Vivara lie between Ischia and the mainland. *Procida* is 2½ miles across, and is partly covered by the town, while the rest produces vines, figs, and oranges. *Vivara* is about a mile in length, and is chiefly occupied by fishermen. Between Vivara and Procida is secure anchorage for vessels in 4 fathoms water, open only to south or south-east winds. *Capri*, at the south-western extremity of the Gulf of Naples, consists of two lofty hills, one of which exceeds 3000 feet in height, with a fertile valley between them, which produces much wine and oil.—The population, 3620, is scattered over the island. The *Lipari Islands*, situate to the north of Sicily, consisting of *Lipari*, 100 square miles, with 15,000 inhabitants: *Volcano*, 15 miles in circuit; *Salina*, 14 miles in circuit, with 4000 inhabitants; *Felicudi*, 9 miles in circuit, with 1100 inhabitants; *Alicudi*, a volcanic cone, with 750 inhabitants. *Panaria*, 7 miles in circuit, with 200 inhabitants; *Basiluzzo*, 1½ in circuit. *Stromboli*.—These islands are all volcanic, with rugged surfaces, their western coasts rising abruptly in precipitous masses, and shelving down gradually to the eastward, and having each a high isolated rock on its northern shore. The climate is highly salubrious, and the weather generally soft and refreshing; but the general porousness of the volcanic soil occasions a scarcity of water. The land is however well cultivated, and yields grapes, currants, figs, prickly pears, corn, cotton, olives, and pulse. A large quantity of wine and currants is annually exported, and an active trade is carried on in bitumen, pumice, nitre, pozzolana, cinnabar, coral, and fish. Alum likewise formed at one time a considerable article of export, but the produce has decreased. Total population of the group 22,350, who are a contented, temperate, and hardy race, and are esteemed excellent sailors. *Lipari*, the chief town, and seat of government, is situate on the south-east side of the island of that name, is a bishop's see, has two havens, a castle, a cathedral, and several other churches. It is healthy, though crowded, irregularly built, and filthy, and contains 12,500 inhabitants. The most remarkable of these islands are *Volcano* and *Stromboli*. The former is lofty, with a great crater 2500 feet high, and not easily accessible, full of volcanic scoriæ, coated over with sulphur, alum, vitriol, and muriate of ammonia, and emits from numerous openings gusts of sulphureous and hydrogenous vapour, accompanied by a noise like that of a waterfall. Fire is observable from it at night, when a pale lambent flame issues from many of the fissures, accompanied by nauseous fumes and vapours. *Stromboli*, the most northerly of the group, is a conical bifurcated mountain 2000 feet high, with an irregular base, about 9 miles in circumference. A crater opens in the side, about a third of the height below the summit, and has continued to burn from the earliest ages, with frequent explosions, and a constant ejection of fiery matter. *Tremiti, Pelagosa, Pianosa*, small islands in the Adriatic, to the north of Monte Gargaro. *Pantellaria, Linosa*, and *Lampedosa*, three small islands in the Mediterranean, between Sicily and Africa. Pantellaria is about 30 miles in circumference, entirely volcanic, and covered with prodigious quantities of lava, pumice, and scoriæ. The valleys, however, produce olives, figs, vines, and cotton. Population about 5000. The other two are desert, but Lampedusa contains a good harbour. They all belong to Naples.

RIVERS.—The Po, the largest river of Italy, rises from the eastern side of Monte Viso, one of the Cottian Alps, and flows, with few great windings, almost due east, into the Adriatic Sea. It has a course of 500 miles; and, though languid in its current in the lower part of its course, is yet so full, generally, in the spring, as to cause extensive inundations on its banks, which would be attended with very destructive effects, but for the great dykes which have been constructed to keep it within its channel. It soon becomes a large river, and is deep enough to float boats and barges at thirty miles from its source; but its current is often so rapid, that the navigation is at all seasons difficult, and not seldom hazardous. Hence, though it passes in its course more than fifty towns, little advantage comparatively is derived from it for the conveyance of merchandise. The vast body of mud carried down by the Po has, in the course of ages, formed a large delta, extending into the Adriatic, which has raised its channel so much, that the water is now about thirty feet higher than the streets of Ferrara, which is only protected by dykes from being overflowed. Its principal affluents on the right are: the *Vraita; Mairo; Tanaro*, with its tributaries, *Bormida, Ellero, and Stura; Scrivia; Staffora; Tidone; and Trebbia*, all in Piedmont; *Nura, Taro, Parma*, and *Lenza*, in Parma; *Crostolo, Secchia*, and *Panaro*, in Modena; the *Reno, Savena, Silaro, Santerno*, and *Senio*, in the Roman State. Its

principal affluents on the left are: the *Cluson*, *Dora Riparia*, *Orco*, *Dora Baltea*, *Sesia*, *Gogna* or *Agogna*, *Terdoppio*, in Piedmont; *Tesin* or *Ticino*, from Lake Maggiore; *Olona*, *Adda*, *Serio*, *Oglio Mella* and *Chiesa*, and *Mincio* from the Lake of Garda, in Austrian Lombardy. The Po near its mouth divides into three principal branches, named the *Po di Primaro*, *Po di Volano*, and *Po di Levante*.

The VAR, MAGRA, and VAGRA, in Genoa; SERCHIO, in Lucca; ARNO rises in the Apennines, in the province of Arezzo, flows westward, passing Florence and Pisa. Its principal affluents on the right are: the *Sieve* and *Ombrone*; on the left, the *Elsa* and *Era*. The Arno communicates with the Tiber by a canal, partly natural and partly artificial, the basis of which is the *Chiana*, which flows from the lake of Monte Pulciano, on the one side, to fall into the Arno, and from the lake of Chiusi, on the other, to fall into the *Paglia*, an affluent of the Tiber; but these two lakes are really only one with two names, in different parts. The OMBRONE flows through the provinces of Siena and Grossetto, in Tuscany, and falls into the sea in the middle of the Sienese Maremma. The Grand-duke has caused a canal to be dug to carry a part of its waters into the lake or lagune of Castiglione, for the purpose of filling it up with the mud and earth brought down by the river, and thereby removing one cause of malaria. The TEVERE (TIBER) rises near the eastern border of Tuscany, as far north as Florence, and near the source of the Arno, and flows south and south-west into the Tuscan sea below Rome. At Ponte Molle, near Rome, its stream is 600 feet wide, and it flows into the sea with a strong current. Near its mouth the Tiber divides into two branches, one of which enters the sea at Ostia, the other at Fiumicino; by the latter of which vessels now pass to and from Rome. Its principal affluent on the right is the *Chiana*, with its tributary the *Paglia*; on the left it receives the *Topino* or *Topino*, whose affluents are the *Chiasco* and the *Timia*; the *Nera*, with its affluents the *Corno* and *Velino*; the *Cremera*; and the *Teverone* (anc. *Anio*.) The *Marta*, the outlet of the Lake of Bolsena.

In the kingdom of Naples the principal rivers are,—the *Garigliano* and *Volturno*, which flow through the Terra de Lavora, and fall into the Gulf of Gaeta; the *Sele*, in the Principato Citra; the *Crate*, in Calabria Citra, and the *Bradano*, in the Basilicata, both of which fall into the Gulf of Taranto; the *Ofanto*, *Candelaro*, and *Fortore*, in Apulia; the *Pescara* and *Tronto*, in the Abruzzi.

On the Adriatic side of the Roman State are the *Amone*, *Marecchia*, *Metauro*, *Esino*, *Musone*, *Potenza*, and *Chienti*. To the north of the Po, in Venetian Lombardy, are, the ADIGE or ETSCH, which rises in the Tyrol, passes Trent, Verona, and Legnago, then divides into several branches, and falls into the Adriatic, near the mouth of the Po; its principal affluent is the *Eisch*, on the left. The *Adigetto*, one of its principal branches, passes Badia and Rovigo; another branch, the *Canal Bianco* or *Castagnaro*, passes Adria. The *Bacchiglione*, *Brenta*, *Sile*, *Piave*, *Livenza*, and *Tagliamento*, flow from the Alps, through the Venetian provinces, into the Adriatic Sea; the first passing Vicenza and Padua; the second, Bassano; the third, Treviso; the fourth, Belluno; the fifth, Sacile; and the last passing Tolmezzo, Spilimborgo, and Latisana. The *Isonzo* or *Lisonzo* rises in the kingdom of Illyria, passes Goricia and Gradisca, and falls into the Adriatic.

LAKES.—The principal lakes of Italy are situato at the base of the Alps, on the northern border of Lombardy; but there are also many smaller lakes and considerable lagoons in the interior and on the coasts of the Peninsula. The *Lake Maggiore* formed by the river Ticino and 28 smaller streams, is about 48 miles in length, and from 4½ to 7 in breadth; its surface is 640 feet (195 metres) above the level of the sea, and its greatest depth 2625 feet (800 metres.) In a bay, about the middle of its western side, are the celebrated *Borromean Islands*, which, about the middle of the sixteenth century, were converted from barren rocks into beautiful gardens, and decorated and embellished at an immense expense by the Count Borromeo. They have been an object of admiration to travellers ever since. The lake is surrounded by picturesque hills, covered with vineyards interspersed with villas, and here and there with cascades which fall down the sides of the mountains. The *Lake of Lugano* is situate to the eastward of Lake Maggiore, to which it sends its surplus waters by the river *Tresa*. It is fed by 43 brooks and rivulets, and is surrounded by rugged mountains, generally rising abruptly from the water's edge; but having in six places small cultivated valleys which recede from as many bays. The *Lake of Como* and *Lecco*, about 37 miles in length, and from one to four miles in breadth. About the middle it divides into two branches, one of which terminates at Como, the other at Lecco, from which towns the two portions take their names; it is traversed by the Adda (an affluent of the Po, which comes from the Valteline, and leaves the lake at Lecco. The surface of the lake is about 650 feet (198 metres) above the level of the sea, and its greatest depth is 1698 feet (589 metres); but in the northern part it is shallow, and the shores are infested with malaria. This lake is much exposed to sudden and severe storms, occasioned by gusts of wind from the neighbouring mountains; but it is highly celebrated for the picturesque beauty of its shores, and is plentifully stocked with fish. The *Lake of Iseo*, between Bergamo and Brescia, 20 miles in length, and from 4½ to 7 in breadth. Its surface is about 630 feet (192 metres) above the level of the sea, and its greatest depth 984 feet (300 metres.) The *Lake of Garda*, one of the most beautiful of all the lakes of Lombardy, is about 35 miles in length, varying in breadth from 4 to 14 miles. Its surface is 256 feet (78 metres) above the level of the sea, and its greatest depth 951 feet (290 metres.) Its principal feeder is the river Sarca, and its surplus waters form the Mincio, an affluent of the Po. *Orta*, to the south-west of Lake Maggiore, about nine miles in length, a romantic lake, surrounded by lofty mountains, wooded slopes, and shores enlivened with numerous villages. Besides these, there are the smaller Alpine lakes of *Varese*, *Monate*, *Comabbio*, to the east of Lake Maggiore; *Piano*, near the east end of the Lake of Lugano; *Lake Pusiano*, and *Lake Sala*, south-west of Lecco.

In Central Italy:—The *Lake of Perugia* (ancient *Thrasimenus*), 50 miles S.E. of Florence, is a beautiful sheet of water, about 30 miles in circumference, and, in some parts, about four miles across. It is surrounded by picturesque hills, abounds with excellent fish, and one of the rivulets which flows into it bears the name of *Sanguinetto* (bloody), so called from its having flowed with blood on occasion of the terrible victory gained by Hannibal over the Roman Consul Flaminius. The *Lake of Bolsena*, a circular basin in the Roman territory, about 50 miles N. of Rome, is 40 miles in circumference, and is surrounded by volcanic hills. The *Lake of Bracciano*, 20 miles N. of Rome, is also a circular basin, 28 miles in circumference, and more than 6 miles across. The *Lake of Albano*, 12 miles S.S.E. of Rome, an oval-shaped basin, is one of the most beautiful pieces of water in the world, and, in respect to scenery, beyond comparison the finest of those of purely volcanic origin in Italy. It is 2½ miles in length, 1¼ in width, more than six miles in circuit, and 919 feet above the level of the sea.—(*Gell's Topography of Rome, &c. I.* 39.) It is situate in a deep hollow, formed by a volcanic ridge, 8 miles round. The water escapes through an emissary or Tunnel, more than a mile and a half in length, cut through the hill by the Romans, 359 years B. C., and still in perfect preservation. The *Lake of Nemi*, a small circular basin to the south of Albano, formerly embosomed in the *Nemus Dianæ*, from which it takes its modern name. "Nothing," says Sir William Gell, "can exceed the beauty of this *Speculum Dianæ*." Its surface is 1022 feet above the level of the sea. *Baccano*, another circular lake, in the bottom of an extinct crater, 20 miles N. of Rome, is now almost completely drained by deep cuts through the lip of the crater. *Lake Martignano* (*Lacus Alsietinus*), 16 miles from Rome, between Baccano and Bracciano, in a crater four miles in circumference, and 310 palms deep. Near it is the *Lake of Straccia Cappa* or *Cappi*, about 2½ miles in circuit, and 49 palms deep. About 13 miles east of Rome, on the road to Tivoli, are three lakes, from one of which, called *Solfatara*, or *Lake of Zolfo*, flows a strong sulphureous current, generally accompanied by a long line of vapour, in an arti-

ficial channel, nine feet wide, and four deep, into the Teverone. The water of these lakes adds continually to the rocks around them by petrifaction or incrustation; and the lake called *the Lake of Tartaro*, two miles nearer Rome, which was once deep, has now so nearly filled itself with its own deposits, that in June 1825 it was perfectly dry, a crust having been formed, which probably cut it off from the subterraneous reservoir below.—(*Gell*, I. 72-3.) The *Lake of Celano* (ancient *Fucinus*), in Abruzzo, 15 miles long, from four to six wide, and 100 square miles in superficial extent, is surrounded by hills through which there is no natural outlet for its waters. For the purpose of draining it, a tunnel, 3 miles long, leading to the Liris (Garigliano), was formed by the Roman Emperor Claudius; but, that having in the course of time been choked up, the lake increased so much as to cover more than 10,000 acres of the best land in the province; and the tunnel has accordingly been re-opened, and other hydraulic works constructed, so as to keep the lake at a certain low level. The *Lake Amsancto (Amsancto Nesanto)*, in Principato Ultra, a mile and a half from Rocca San Felice, at the mouth of a valley, and close under a steep shelving bank of decomposed limestone, is of a rhomboidal shape, measuring diagonally about thirty paces by twenty. The water continually bubbles up over a large portion of the surface, with a noise resembling that of distant thunder, though it does not rise higher than two feet. It is of a dark ash-colour, and is supplied by a constant and rapid stream which runs into it from under the barren rocky hill on the one side; a little above it are holes in the ground through which warm blasts of sulphurated hydrogen gas are continually issuing. On the opposite side of the lake is another but smaller pool, called the *Cocraio* or Caldron, on the surface of which are continually floating in rapid undulations thick masses of carbonic acid gas, which are visible at the distance of a hundred yards. The larger lake bears the name of *Mephite*, and is Virgil's *Vallis Amsancti*, through which he makes the Fury Alecto return to Hell, after having roused the Italians to war against Æneas. The *Pontine Marshes*, on the coast, midway between Rome and Naples, 24 miles long, and from 6 to 12 in breadth. Repeated efforts were made during many ages to drain these noxious swamps, a work which has been nearly accomplished by the exertions of Popes Pius VI. and VII.; and this tract of country, whose atmosphere was formerly fraught with disease and death, may now be passed by travellers with little danger, except in July, August, and the beginning of September. The ancient Appian way, and the modern road from Rome to Naples, pass through them. The marshes now form a luxuriant pasturage for cattle.

CLIMATE.—In a country which extends through ten degrees of latitude great varieties of climate must arise from position alone; but in addition to this, the climate of Italy is modified by the proximity of lofty mountains, and the influence of the sea. According to Saussure, Italy, in respect of climate, may be divided into four regions:—The first extends from latitude 46° 28′ to 43° 30′, comprising Lombardy and the northern portions of the Roman States. In this region the mercury of the thermometer sometimes falls 23° below the freezing point; the lagunes at the mouths of the rivers are sometimes frozen; and in January and February snow lies for ten or fourteen days. Delicate plants fail to grow except in sheltered places; but mulberry trees flourish, and rice is cultivated. Slight frosts occur during night in November, and sometimes so late as April; and even in summer, a benumbing cold is brought down from the Alps by the north wind. The second region extends from 43° 30′ to 41° 30′, including Tuscany, Lucca, the southern part of the Papal States, the Abruzzi, and the whole of the western coast to the south of the Appenines. Some part of the latter, indeed, extends northward beyond the 44°; but, being sheltered by the Appennines, it partakes of the more southerly climate. This region is the appropriate climate for the orange, the lemon, and the olive; but even here snow is occasionally seen on the ground. The summer heat at Florence and Rome often rises to 90° Fahrenheit, but in the former the winter is considerably prolonged by the vicinity of the mountains, which in that season, and indeed during the whole year, send down piercing cold winds. The third region extends from 41° 30′ to 39°, and comprises the greater part of continental Naples. Here snow is rarely seen, and never remains on the ground; the mercury seldom falls more than seven degrees below the freezing point, and all plants of the agrumenous tribe flourish in the open air. In the fourth region, which includes Calabria Ultra and Sicily, the mercury rarely falls below the freezing point, and snow and ice are unknown, except upon the tops of Etna and Sila. Tropical fruits come to perfection in the open air, the sugar-cane flourishes, cotton ripens, date trees are seen in the gardens, and the enclosures of the fields are formed by aloes. But this classification applies only, or principally, to the lowlands of Italy; for the increasing elevation of the sides of the mountains, the vicinity of the sea, and the volcanic nature of the soil, all exercise an influence which occasions many local variations of climate. The tops of the Alps are covered with perpetual snow. The northern Apennines are usually clothed with it from the middle of October to the beginning of April; and on the highest mountains of Abruzzo, the Majella, and the Velino, it remains from September till May. The northern part of Italy, indeed, including Tuscany and the Papal States, does not generally present that charming aspect which travellers from the north expect to find in the garden of Europe; it is only after passing Terracina and Manfredonia, on the east and west coasts, that they are introduced to the region, where the winter is scarcely colder than the English September; where vegetation continues without interruption, and the air is filled with aromatic odours. The mean temperature of Naples is, in winter 27° 14′ Fahrenheit, in summer 97° 35′. The climate of Italy is, however, not without great and serious inconveniences. From May to September a burning heat pre-

...vails the sun consumes all descent vegetation: the land, unrefreshed by a drop of ...rain, assumes a russet hue. The sea breeze is scarcely perceptible, except upon the ...coast, and is so tempered as to bring with it from the shores of Africa only a thick ...sultry vapour, which is at the highest degree oppressive. Under the noxious influence ...of the Scirocco south-east wind, vegetation droops and withers, and the human ...frame is affected with languor and depression. In addition to these external evils, vol...canic fires burn perpetually under ground, and periodically sends forth noxious ...vapours which are injurious to health, and sometimes threaten to depopulate exten...sive districts. To these evils may be added the annoyance produced by numerous ...swarms of insects which fill the air, visit the houses, and are a constant source of ...irritation. The low marshes at the mouth of the Po, the Pontine marshes, and other ...similar localities, produce miasmata which shorten human life, and are reckoned among ...the causes that the population in districts to the whole number of inhabitants is greater ...than that in any other country in Europe.

...Such are the facts respecting the finest climate in Europe, Italy may almost be said ...to possess in perfection, or at least the most amiability. The clear blue sky gives only ...a faint idea of the transparency of the atmosphere. Yet there is hardly a spot in the country that is free from the ravages of the *malaria*, a mysterious scourge which, during a great ...part of the year, infests many of the finest places, has converted large tracts of country ...into pestilential wastes, and deserts, and appears to be in some places continually ...increasing its dominion. But besides the *malaria*, the climate is in many parts ...subject to extreme changes of temperature, from its relative situation to the Alps, ...the Apennines, and the deserts of Africa. In England atmospherical changes are very ...frequent, but are limited in their range, while in Italy the reverse is the case; ...the changes are not so frequent, but their range is often most extensive; and the ...sudden and violent transitions of the English atmosphere are not to be compared to ...the more striking meteorological phenomena of Italy. Indeed, the very circumstance ...which forms its charm, and the theme of praise in the Italian climate, is that which ...forms its imperfection, namely, the long intervals of fine weather ...without any perceptible changes.

...The Italians seem proud of the dryness of their climate. In some places, however, ...as at Pisa, as much rain falls as in Cornwall; at Rome, only about one-third less ...than in Portugal. In the former country, being 28 inches, and the number of rainy ...days [illegible] at Naples and Leghorn the average is 35 inches; at ...Pisa [illegible] at Venice, 38; at Florence, 25; but at Altemura, in the ...Abruzzi, at Naples, and at Terracina, only 17 or 18 inches.—*Gell's Top. of Rome*, I. ...[illegible] The rains are not more frequent than in England; but it makes ...[illegible] flooding the water courses, overflowing ...[illegible] The powerful sun then bursts ...[illegible] not only exhales vapour from the soil, but also the ...[illegible] of vegetable and animal substances, pro...duces a [illegible] fatal not only to the invalids who have visited the ...[illegible]

...[illegible] which [illegible] atmosphere is [illegible] by the Apennines, ...[illegible] which [illegible] are of essentially different forma...tions. [illegible] throughout the greater part of their mass, are a ...[illegible] [illegible] of their northern and western prolongation ...[illegible] [illegible] Near the point where they are con...nected [illegible] [illegible] consist of serpentine, of gneiss and beds of slate, limestone, and ...a [illegible] rock. [illegible] [illegible] and the Val of Spezzia are principally ...[illegible] [illegible] [illegible] The mountains from Ho...mond's, Apennine, and Monte Alto, in the Carrara district, resemble that of Jura: in ...Carrara the central part of the chain consists of crystalline gneiss, mica slate, and other primary ...forms, having upon [illegible] [illegible] [illegible] are deposits of tertiary rocks. But ...along the Mediterranean [illegible] [illegible] [illegible] [illegible] the base of the mountains, more ...ancient rocks appear at the surface, [illegible] [illegible] [illegible] [illegible] the ridges on the Adriatic side, ...in which [illegible] [illegible] [illegible] [illegible]

Bolsena, and the extinguished craters of Viterbo, Bolsena, Bracciano, and La Tolfa; and to the south-east, the basaltic hills of Albano, Frascati, and Marino, and the ancient craters of Albano and Nemi. Accompanying this belt of volcanoes, is a bed of tufa regularly extended from the mountains of St. Flora in Tuscany, through the Romagna into Campania, the vicinity of Vesuvius, and the Phlegrean fields, and even into Ischia, Procida, and Lipari; but in the neighbourhood of Rome, the tufa strata are intermixed with a limestone of modern formation, called travertino, of which the principal monuments of that city are built, and with formations of marl, clay, river sand, and other fresh-water deposits.

The only active volcano now in Italy is *Monte Vesuvio*, situate on the eastern shore of the Bay of Naples. It is composed of an older portion, named Monte Somma, evidently the remaining half of a very large crater, and of the modern conical summit rising within and overtopping it. The first recorded eruption of Vesuvio took place in the year 79 of the Christian era; since which time, its eruptions have been frequent, and often terribly destructive. To the westward of Naples is situate the volcanic region named the Phlegrean fields, where, in the year 1538, a hill, still called *Monte Nuovo*, 413 feet high, and 8000 in circumference, was thrown up in two days. The hill is composed of fragments of scoriform matter, or of a compact rock of an ash-grey colour, in some places resembling trachyte, and in others approaching to porphyry and calx, and on its summit is a crater of a quarter of a mile in circumference. Between Monte Nuovo and Puzzuoli, is an extinct volcano named the *Solfatara*, from which gaseous exhalations mixed with aqueous vapour are continually rising. The rock of the hill is trachyte, and a vast stream of lava extends from it to the sea, where it forms the promontory of Monte Olibano, overtopping the extensive formation which reaches from Puzzuoli to Cuma, and appearing to be continuous with the rock which is found in the vicinity of Naples, and which, long known by the name of Puzzuolana, is a formation of volcanic tufa. The lakes of Agnano and Avernus occupy the craters of extinct volcanoes. Monte Barbaro, also on the west side of Naples, has on its summit a crater of great antiquity, now covered with verdure. The crater of Astroni, likewise, is of such perfect formation that it has been selected by the King of Naples as a preserve for wild animals destined for the chase. According to Brieslac, the number of craters in the vicinity of Naples is not less than twenty-seven. The *Grotto del Cane*, situate on the borders of the lake of Agnano, is perpetually giving out carbonic acid gas, mixed with aqueous vapour, which proves fatal to any animal plunged into it, an experiment often tried with dogs *(cane)*, whence the name.

The great plain of Lombardy, which occupies nearly the whole of the north of Italy, is formed of tertiary rocks, more or less covered with diluvium; while the lower ranges of the Alps, in the districts of Como, Bergamo, Brescia, Verona, &c., and the hills of Brianza, in the plain of Milan, are of secondary limestone, probably identical with that of the Appenines. To the south of Padua rises a tract of high ground, named the *Euganean hills*, which consist of a trachyte formation evidently of volcanic origin. The tertiary deposits of Lombardy contain remains of whales of extinct species, of elephants, rhinoceroes, hippopotami, &c.; and fossil remains of the same kind occur more abundantly in the overlying diluvium. Tertiary and diluvial deposits also extend from Ancona along the coasts of the Adriatic, with but little interruption, to the extremity of the Peninsula.

SOIL AND VEGETATION.—The variety which we have exhibited in the composition of the solid masses, which are the foundation of the cultivable mould, must have an influence equally diversified upon the nature of the soil and the vegetation. The soil of the valley of the Po, which consists partly of loam and partly of sand, and has been formed by extensive alluvial washings and gradual deposition, shews, upon the whole, more uniform relations than that deposited in the valleys and at the foot of the Appenines. Among these hills the soil possesses various qualities, according to the species of the rocks from which it has been formed, and which it still covers, as well as according to the different ways in which its particles were deposited. In the bottom of the great valley the soil is for the most part rich and deep, but along the bases of both the Appenines and the Alps, are vast accumulations of beds of pebbles, thinly covered with mould, which cannot be cultivated with any profit. The greatest difference is found between the soil which belongs to the middle and principal limestone region of the Apennines, which is mostly of a clayey nature, and the fine, loose, and generally dark-brown coloured mould, which has proceeded from the decomposition of volcanic products, and is in general highly favourable to vegetation. But besides these differences of soil, the great extent of the country in latitude gives to northern Italy a vegetation almost entirely different from that of the south; and the elevation of the ground above the level of the sea, from the coast to the plains and the mountain ridges, occasions also a great variety of vegetable regions.

The vegetation of Northern Italy bears a striking resemblance to that of the warmer regions of southern Germany, Switzerland, and France. The chestnut tree is the ornament of the forest; the vine, with its tendrils, climbs the mulberry tree; wheat and maize, in some districts, and rice in others, are the principal grains. Cultivation, which is favoured by the loose soil of Lombardy, derives great advantage from the abundant supply of water poured down from the mountains. An extensive and skilful system of irrigation is constantly employed, not only in watering the meadows, but also in promoting the cultivation of rice, which is entirely dependent upon it; and, in order to preserve the necessary degree of moisture in the air, the fields are bordered by trees, whose stems support ivy and vines. The whole of this region consequently exhibits a monotonous character, which, however, is lessened on approaching the mountains; while the valleys which open out of the Alps exhibit the greatest and the most varied natural beauties. At the outlet of some of those valleys the streams become expanded into lakes, which indescribably increase the attractions of the scenery. Steep mountain walls reflect the rays of the sun; yet the temperature is

moderated by the cool breezes from the mountains. The vine overhangs the liquid mirror, and chestnut trees cast their shadows along the bottoms of the hills. The laurel indicates the neighbourhood of the evergreen vegetation which particularly characterizes the south of Europe; and single pines and cypresses announce the peculiar forms of the trees which first appear more generally in middle and southern Italy. Rocks tower in picturesque forms above the trees; torrents rush through the deep ravines; and in the back ground, through the foliage of the pine clad mountains, are seen the snowy summits of the Alps.

The Apennines, as far as they bound the valley of the Po, draw a marked line of distinction between the productions of Northern Italy and those of the south; and the difference of vegetation on the opposite acclivities of the chain is striking. That upon the north side agrees entirely with the vegetation of the southern base of the Alps; whereas on the south side of the mountains, which suddenly sinks towards the sea, the olive is extensively cultivated, and many other evergreen trees and shrubs appear. Proceeding southward into Middle and Lower Italy we find the trees and shrubs characteristic of those regions limited to the lower plains in the neighbourhood of the mountains, and extending from the sea to a height of 1200 feet. These plants include the evergreen oak, the pistacio tree, the strawberry tree, and the myrtle. The olive tree extends over the whole of this evergreen region, and the laurel and the orange-tree likewise flourish in it. In the greater part of Italy, however, the orange-tree is found only in detached districts, which are peculiarly favourable to its growth, and is not cultivated to any considerable extent. Even where the culture of the orange is an object of importance, as in Calabria, there are still no proper orange groves. Hence the cultivation of the orange-tree has much less influence than that of the olive on the general aspect of the Italian landscape, the leading peculiarity of which arises from separate lofty pines with their wide spreading tops being mixed with groups of cypresses, which present a singular contrast. In a still higher degree the landscape acquires a distinctive character from the date palm; a tree which is found only in isolated and sheltered spots, especially on the coast, and even there it occurs very sparingly, only a few individuals generally growing together. Rising above this evergreen region, the vegetation of the next zone more resembles that of the northern parts of Europe. The evergreen trees and shrubs disappear, and in their stead grow deciduous oaks and chestnut trees, which are found to the height of 3000 feet. Above them the beech becomes the prevailing tree, accompanied sometimes by various trees with pointed leaves, as pinus picea, p. sylvestris, taxus baccata. At a height between 5000 and 6000 feet, the beech and the pine are found occasionally intermixed with creeping shrubs and alpine plants, and generally reach as high as 7500 feet; and with them are associated vaccinium myrtillus, arbutus uva ursi, juniperus nana. Only a few mountain summits exceed the height of this zone; these are the pinnacles of the Abruzzi, Gran Sasso, Majella, and Velino. The vegetation of Middle and Lower Italy varies very much in regard to its richness and abundance. In many districts it is most luxuriant; especially where crystalline or volcanic rocks produce a favourable soil; or where, as in some bays, rocks afford shelter against hurtful winds; or where the supply of water maintains the requisite degree of humidity. Travellers are enraptured with the rich vegetation at the base of the marble mountains of Massa and Carrara, and on the declivities of the Appenines towards Lucca; with that on the volcanic hills of Frascati and Albano, on the rocky shores of Terracina, Molo di Gaeta, Sorrento, and Salerno; and with that at the waterfalls of Terni and Tivoli; but such luxuriance is not general. Over the far greater part of the calcareous Apennines only a stinted vegetation is found. Myrtles, which fix their roots in fissures, and other evergreen shrubs, do not form a foliage so thick as to conceal the rocks on which they grow, particularly on the offsets or spurs of the mountains; it is only in the interior recesses of the range that high and thick forests are occasionally found. When, notwithstanding this barrenness, the mountains appear picturesque to the eye, the beauty in general arises from their outline alone. The indentations and projections can be distinctly recognised from a great distance, and occasion that striking contrast of light and shade which produces the most agreeable impression. The extraordinary clearness of the atmosphere, which gives an indescribable charm to distant objects, the deep blue of the sky, the unusual forms of the vegetation, the enrapturing view of the sea, and the remarkable appearance of Vesuvio and its smoke, all taken together, fix the gaze of the observer. Hence districts often appear beautiful, which, when viewed in reference to the surrounding objects, are not truly so; and after reflecting upon the scenery with unprejudiced composure, and considering what really constitutes the beauty of a landscape, we deem them inferior to

many in our own country. But it is not only what is produced spontaneously that imparts specific character to a landscape; that is, in a great degree, modified by cultivation. In this respect also, there are the greatest differences between Middle and Southern Italy. The regularly planted olive tree, with its stem often crooked and hollow towards the root, and its small bluish-green leaves, can never impart much beauty to a country; but the vine must always be an ornament, where, as in Italy, propped up by elms and poplars, it has a much more luxuriant growth than in France and Germany. Sometimes, as in the fertile plains of Naples, it climbs with its tendrils around the well cultivated fields, and forms a sheltering roof for the wheat, maize, or pulse, which they bear. — *(Sketches of South European Nature — Italy. By Professor Hausman. — Edin. New Phil. Journal, XXVIII.* 326.)

ANIMALS. — There seem to be few, if any, wild animals peculiar to Italy; the native quadrupeds have never been particularly enumerated; the wolf is still found among the Apennines, and the wild boar in Calabria. There is a great variety of birds; and, among the insects, the tarantula and the silk-worm are equally celebrated. The domesticated animals are not very remarkable, the country being ill adapted for grazing. The common breed of oxen is one of the largest known; but there is another species, principally found in Tuscany, which is much smaller, and is esteemed for its fine form and pure white colour. Sheep are generally scarce, though in La Puglia there are large flocks. In Southern Italy the cheese, butter, and milk, are derived from goats, which are kept in flocks. The pigs are all of the long-legged, unimproved breed. At San Rossara, near Pisa, in Tuscany, there is a breed of the Arabian camel which was introduced about two centuries ago, but has considerably degenerated, the soil and climate being ill adapted for it.

PEOPLE AND LANGUAGE. — The Italians are a mixture of races, composed of Greeks, Gauls, Germans, Goths, Arabians, and many others, who have migrated into the Peninsula at various times, and intermingled with the aboriginal population, whose language they have superseded. They have long been divided into numerous tribes and nations, with separate political and social interests, and speaking dialects so different, that the inhabitants of one province can scarcely, if at all, understand the language of another. From these dialects, however, has been framed a speech which by cultivation has attained a peculiar character, and has become a common bond of union. The language employed by the best writers, is nearly the same in every part of Italy; and all the educated classes can understand and relish the works of the great Italian classics, Dante, Petrarcha, Boccacio, Tasso, and Ariosto, which are written in the Tuscan dialect. The basis of the language is the Latin, but very much modified by the infusion of foreign elements, and by the inevitable changes of many centuries. As a nation, the Italians, excepting those of the lowest class, are a fine race of people. The men are well formed, rather slim than stout, but strong and agile, with a dark complexion, expressive countenances, dark sparkling eyes, and, generally, black hair. Their gait is grave, but not solemn, and their whole appearance is indicative of self-respect. The women have narrow foreheads, black or dark-brown hair, large, brilliant, and expressive eyes, a beautiful nose, which, with the forehead, forms the elegant Roman profile; a small mouth, with lips rather swelling; a clear white complexion, with slight red tinges appearing through it, and a delicate, but well formed figure. But the lower classes, in consequence of early marriages, of living wholly on vegetable food, and hard labour under a burning sun, rarely display any peculiar attractions. The lower class of the town population are in bad repute, as to both morals and instruction. They are represented as more acute than honest, and as restrained from violations of life and property only by the activity of a very vigilant police. In no country is to be found a greater number of beggars, or so numerous a body of people, as in all the cities of Italy, whose cares extend merely to the wants of the passing hour. The greater part, however, of the population in the country is devoted to agricultural pursuits. Very few of these are in circumstances of even moderate affluence; a few more may be represented as in a state of comparative ease, enjoying a bare competency; but the great mass of the people, to which all the other classes bear but a small proportion, are in the most wretched condition. They are the occupiers of small portions of land, sometimes not larger than an acre, and generally less than four acres, where, living in miserable hovels, which barely furnish them with shelter, they labour in their fields and support themselves and their families on half the produce of the land, the other half forming the proprietor's rent. Even with the utmost care, their supply of food sometimes fails, and they have then no other source than beggary or starvation. This is the condition of the great mass of the people of Northern and Middle Italy; while, in the South, the lazzaroni of

Naples are living proofs of the wretched condition of great numbers in that more fertile soil and more temperate climate. Some German travellers have even asserted that the majority of the tenants in Italy are in a worse condition than the serfs in those parts of Germany where the system of serfage continues in force. An excessive population, and a system of legislation favourable only to the rich, are the chief causes of these evils. Capital, courage, and opportunity are wanting to enable the peasantry to attain better circumstances elsewhere. But one of the greatest and most dangerous evils of Italy, at the present day, is the legalized mendicancy which everywhere prevails; a system the more dangerous, because the support of it is regarded as a proof of beneficence and genuine christianity. Large foundling hospitals exist in almost all the cities, in which thousands of deserted children are annually provided for; other institutions of various kinds are likewise numerous; and the result is the continual increase, rather than the prevention or alleviation, of beggary, misery, and crime.—*Raumer's Italy.*

RELIGION.—All the Italians may be said to profess the Roman Catholic religion, because only a small fraction of the population adhere to any other creed. This fraction is subdivided into: the *Vaudois*, or *Waldenses*, an ancient sect of Protestants, who occupy the valleys of Lucerne, Angrogno, and Saint Martin, in Piedmont; the *Calvinists* and *Lutherans*, established in the principal commercial towns, particularly at Venice, Naples, and Leghorn; the *Greeks*, who are found at Venice, Leghorn, and in different parts of Naples; and the *Jews*, who live in all the great towns and places of trade, but are most numerous at Rome, Leghorn, and Venice. The Roman Catholic clergy are very numerous, being said to amount to about 500,000, or to one in forty of the population. But the number of sees, which formerly exceeded that of all the bishoprics in the rest of Christendom, has been much reduced, as well as the greater part of the monasteries which once abounded in the cities and towns. The churches, however, still possess great wealth, and are everywhere sumptuous in their decorations and ornaments, containing much of what is most magnificent in art, and most refined in taste and beauty. The exterior of the churches is, in general, very imposing, and the religious ceremonies are performed with the greatest degree of pomp and solemnity. The higher clergy possess great power, they all enjoy immunity for their persons and property, and are in most cases exempted from taxation. The secular priests are under the superintendence of the bishops, and the monasteries are governed by the chiefs of their several orders. The moral virtues, however, of the people, owe but little to the institutions of the church; for though religion is interwoven with the whole fabric of Italian life, and pervades intensely the entire frame of society, it exercises but little influence on the conduct and character of the mass of the population. Penances, confessions, and absolutions, are the almost universal substitutes for moral qualities; and little beyond these is inculcated in religious instruction.

EDUCATION.—In no part of Europe is the education of the lower classes so much neglected as in Italy; for, though some advances have been made in Lombardy and Tuscany, no improvement has yet been projected in the other States. The instruction of the poor is entirely in the hands of the clergy, and is so ill attended to that but few of the peasantry can read, while of the mechanics in the towns it is difficult to find one who can write his own name. The institutions for the education of the higher classes are also far behind those in other countries of Europe. Among these are the colleges and lyceums, where the instruction is partial, and little calculated either to improve the taste, or to foster freedom and expansion of thought. The studies of the youth are principally directed to logic and classics, to the exclusion of the sciences, the languages of other countries, their customs, institutions, and modes of thinking and reasoning. Mathematics are scarcely known, but casuistry is sedulously cultivated. The Ambrosian College and the Brera College at Milan, are exceptions to this description, but in everything, except classical literature, even they are far from being well conducted. Notwithstanding, however, the disadvantages under which they labour, many Italians may be said to be well educated, and to be qualified, upon some subjects, to rank with the most distinguished literary and scientific men in Europe. They acquire knowledge not by means of their institutions but in spite of them. A general desire for knowledge seems likewise to be pervading the country; and under its influence both literature and science will extend more rapidly by means of self-cultivation, than through the instrumentality of indifferent, or ignorant and hostile teachers. The universities are sufficiently numerous, and nearly all of ancient date: Bologna, founded in the year 1119; Naples, 1224; Padua, 1228; Rome, 1248; Perugia, 1307; Pisa, 1329; Siena, 1337; Pavia, 1361; Turin, 1412;

Parma, 1422; Florence, 1433; Catania, 1445; Cagliari, 1764; Genoa, renewed and extended in 1783; to which may be added that of Modena, which, after long neglect, has been lately re-established. In almost all the cities there are literary and scientific societies, which have been long in operation, and have cherished and encouraged learning among their members. These societies which were begun in the fifteenth century, and have multiplied and increased ever since, have contributed, since the revival of learning, to its preservation, at least, and have been, in a great degree, the means of bringing talents and industry into public notice. One of the earliest, as well as the most celebrated, is the Academia della Crusca at Florence, established for the purpose of improving the Italian language, by which it has acquired great renown; but the most flourishing of these institutions at present, are the Imperial Institute at Milan, and the Academy of Sciences at Turin. The institutions for the promotion of the fine arts are numerous, and are placed in connection with schools, in which painting, sculpture, and architecture are taught by competent masters. The most important of these are at Rome, Florence, and Bologna. Italy abounds with collections of books, and especially of manuscripts of great antiquity and of high value. The libraries, however, are generally very deficient in works of science and of modern literature. The most celebrated of the libraries are those of the Vatican at Rome, the Ambrosian at Milan, that of St. Mark at Venice, and of the Magliabechi and Medici at Florence. There are also in every part of Italy museums of great value, which are generally arranged in the most perfect manner. The most distinguished of them are those of Florence and Naples: all of them are open to the public, and thereby made the common property of all nations. Each palace of the nobility, and every public building is a cabinet of art; and every city boasts of its antiques or collections of modern works. Picture galleries are to be found everywhere; the churches too are adorned by exquisite pieces of painting and sculpture, as well as by their architecture. There are also botanic gardens attached to most of the universities, and several in the vicinity of the larger cities; and there are astronomical observatories at Bologna, Padua, Milan, Florence, and Palermo.

GOVERNMENT. — Italy is divided into nine sovereign States, in all of which, with the exception of the petty republic of San Marino, the government is vested in an absolute monarch, and is everywhere exercised with the most rigorous despotism. But even in this respect there are varieties; for, while some of the governments are so despotic as to be positively oppressive, others are exercised with a degree of liberality and attentive consideration of the welfare of the people that would almost entitle them to be called paternal. The governments of Rome and Naples, though equally despotic with the others, have long been singularly inefficient, powerless for good, and exercising but little restraint upon the corruptions of a disorganized society. Upon the affections of their people, whom they have never benefitted, the sovereigns have no hold, and it is only by the support of Austria that they are enabled to keep possession of their thrones and dominions. But, while it affords this protection to the governments, the power of Austria effectually checks the energies of the people, who, participating in the spirit of liberty which at present pervades all Europe, are eager to throw off the yoke of their worthless oppressors. Of these nine States, three are kingdoms; one, a grand-duchy; three, duchies; one, an elective ecclesiastical monarchy; and one a republic. Their names, areas, population, revenues, and military forces, are stated in the following table: —

Names of States.	*Area in Sq. Miles.*	*Population.*	*Revenue.*	*Army.*
Kingdom of Lombardy,	8,460	2,474,000	—	31,400
and Venice	9,472	2,094,000	—	
Kingdom of Sardinia,	29,050	4,470,000	—	35,200
Kingdom of Naples,	44,510	7,752,000	4,500,000	37,725
Grand-duchy of Tuscany,	8,700	1,350,000	—	4,500
Duchy of Parma,	2,300	440,000	—	1,400
——— Modena,	2,068	390,000	274,000	1,750
——— Lucca,	420	145,000	—	680
States of the Church,	17,860	2,471,000	—	17,707
Republic of San Marino,	27	8,000	—	40
TOTALS,	122,867	21,483,000		140,390

Of the kingdoms and duchies the sovereigns are hereditary monarchs; the sovereignty of the States of the Church is vested in the Pope, the primate or head of the Roman Catholic Church, and who is elected for life, out of their own body, by

the college of cardinal bishops, priests, and deacons. The Popes being generally old men before their election, their succession has been more frequent than that of any other series of sovereign princes, hereditary or elective. The Pope unites in his person three different offices: — 1. Supreme pontiff and head of the Roman Church and hierarchy; 2. Bishop of Rome; 3. Temporal sovereign of the Roman State. His ministers in his spiritual capacity are: — 1. The *cardinal-grand-penitentiary*, who decides on cases of conscience, with the assistance of several prelates; 2. The *cardinal-sommista*, who presides at the tribunal of the Apostolic Chancery, and whose duty it is to give his opinion on matters of doctrine or discipline, to affix the seals to, and expedite the Pope's bulls (*i. e.* charters, letters, rescripts); 3. The *cardinal-prodatario*, who, with a numerous body of sub-officers, decides all affairs concerning livings and other temporalities of the clergy, dispensations, licences for marriages between relations, &c.; 4. The *cardinal-segretario di brevi*, who has the charge of the Pope's correspondence concerning ecclesiastical matters, expedites the briefs to foreign potentates, &c.; 5. The *uditor santissimo*, a prelate who examines, revises, and reports upon all matters of importance laid before him, examines the claims of the candidates for bishoprics, and is generally the intimate adviser of the Pope, whose full confidence he is supposed to enjoy; 6. The *cardinal-vicar*, who exercises the authority and performs the duties of the Pope as bishop of Rome. As temporal sovereign, his two principal ministers are the cardinal secretary of state, and the cardinal-camerlingo; the former of whom unites in his person the departments of both the home and the foreign affairs, is the prime minister and representative of the sovereign both with foreign courts and with his own subjects. He is appointed by the reigning Pope, and leaves office on the death of his superior. The camerlingo, chamberlain, or master of the household, is appointed for life. The republic of San Marino is situate within the papal territory, and is under the Pope's protection. It consists of only the town of San Marino and four neighbouring villages, but is one of the oldest States in Europe. The Lombardo-Venetian kingdom, or States of Lombardy and Venice, form part of the empire of Austria, and are directly ruled by a viceroy under the controul and direction of the imperial ministry of Vienna. Besides the nine States above mentioned, there is also the small *principality of Monaco*; but the prince resides in Paris, allowing his territories to be garrisoned by Sardinian troops, and is in fact merely a mediatized prince, subject to the King of Sardinia.

PRODUCTIVE INDUSTRY.—*Agriculture.*—With respect to its agriculture, Italy may be divided into three regions; the first consisting of the great plain of Lombardy and Piedmont, bounded by the Alps on the west and north, the Apennines on the south, and the Adriatic Sea on the east; the second is that which extends from the western Apennines, and the frontiers of France and Lombardy, to the borders of Calabria; and the third comprehends those districts where animals and vegetables thrive, but from which man is almost wholly excluded by the malaria, and which, extending along the sea coast from near Pisa to Terracina, is called the *Maremma (Ora maritima.)* Lombardy is without doubt one of the richest countries in the world; the soil of the plain, or central part, is entirely alluvial, composed of materials which have been deposited by water to an unknown depth. In the tracts nearest to the mountains, much gravel, and that of considerable size, is mixed with the earth; but it becomes smaller in size, and less in quantity towards the centre and eastern borders, so that almost the whole may be said to be composed of a black and very fertile mould. The neighbouring mountains afford an immense supply of water; and to this, not less than to the natural richness of the soil, is Lombardy indebted for its great fertility. To distribute the water, a very regular system is pursued, which it has required considerable skill and capital to carry into effect. From the irrigation thus practised arises an inconceivable fertility which supports a crowded population. Lombardy abounds in villages and large towns, and possesses all the beauty which richness and cultivation can give to a level country containing nothing which is naturally picturesque. The fields into which it is divided are small, and separated by rows of poplars, which give it the appearance of a wooded country. The country between Lodi and Cremona is the richest part of the Milanese territory. The soil is extremely fertile, and the system of irrigation the most perfect that can be conceived; but the culture of corn gives place, in a great degree, to that of pasture, which serves as food for the cows that produce the cheese so well known over Europe as the Parmesan. The district in which it is produced extends from Pavia to Milan and Lodi, about twenty miles, and in length about forty miles, from Abbiate-grasso, on the Ticino, to Codogno, near the confluence of the Adda and the Po. About 80,000 cows are kept for the purpose, whose annual produce is about 200 lbs. (155 kilogrammes) each. The value of the cheese and butter exported and consumed is about one million sterling (23,360,000 francs.) The other principal articles reared are, wheat, maize, oats, rye, hemp, flax, and legumes; and, in the flat grounds of the lower districts, rice, of which the quantity raised is now very considerable. A crop of rice is reckoned at three times the value of a crop of corn; but the stagnation of a large body of water in a hot climate, covering an extensive surface, which is necessary for the growth of rice, is highly injurious to health; the rice country is in consequence thinly peopled, and the few inhabitants are in a very sickly and diseased condition. In no other part of Italy is the cultivation of silk so large, so valuable, and so well understood as in the north. From the Var to the Isonzo, are extensive plantations of the white mulberry, in some places trained as tall and stately trees, in others pruned down almost to square bushes, but everywhere giving a peculiar and attractive character to the agricultural scenery. With the progressive increase of the culture of silk, the value of land and the prosperity of the people have undergone a corresponding improvement; and it may be added that the quality of the silk has greatly improved under the encouragement of a perpetually extending demand. The estimated produce of raw silk in Italy is believed to be now not much less than twelve millions of pounds annually, of which Lombardy, Venice, Tyrol, and Tessin produce 7,000,000; Piedmont and Genoa, 2,000,000; Naples and Sicily, 1,200,000; Papal States, 800,000; Parma, Modena, and Lucca, 550,000; Tuscany, 300,000: worth about £12,000,000 sterling. The cultivation of the land in Lom-

bardy, and indeed throughout all Italy, is performed solely by means of oxen. The plough is drawn by two oxen without a driver; the waggons also, or carts, are drawn by oxen, the horse being scarcely ever employed for any purpose of husbandry. The implements used are also everywhere of a very rude and unimproved construction. About four-fifths of the population of Lombardy are connected, directly or indirectly, with agriculture, and about eight-ninths of the whole surface of the country are under cultivation.

The Genoese territory rises everywhere from the seaside into hills and mountains, and is less adapted for agriculture, than for gardens and orchards. The olive is the prevalent object of cultivation, southern fruits are raised in the most favourable places, the chestnut on the higher grounds, while pasturage and herds are the objects of attention among the maritime Alps. Everywhere there is great industry, but nowhere much opulence, the proverb holding good; "He who possesses only olive trees will always remain poor." Even a trifling frost injures this delicate plant, and still greater destruction is occasioned by certain insects. Seedlings bear no regular crop of fruit till they are fifty years old; but, if propagated by cuttings, the trees bear in twenty-five years. In good years 150 or 200 olive trees, on a surface of two acres, will produce from 500 to 800 gallons of oil. The trees blossom in May, and the harvest begins in December. Orange and lemon trees yield a full harvest only after twenty years; they grow best on a light soil, which is well watered, and well manured. A hundred trees will produce 30,000 fruit. The pastoral part of the population are more opulent than the olive growers; though the pasturage and cattle are both inferior to those of Switzerland.—*(Raumer's It aly, I. 275, &c.)*

The agriculture of Tuscany belongs partly to a system of irrigation similar to that of Lombardy, and is partly adapted to the cultivation of the steep sides of the hills. Property is extremely subdivided, and the farms are in general cultivated by farmers who divide the produce with the landlord. The principal articles of cultivation are wheat, maize, clover, beans, peas, and other pulse; and, above all, the vine and the olive. Such is the richness of the alluvial soil in the valleys, that although manure is applied to it only once in five years, yet the crops are very abundant. The culture also which is very fine and careful, and the judicious succession of crops, have their share in producing this effect. An immense population lives on the produce of these farms; but there is observed among them a complete absence of all the conveniencies of life, and an appearance of the greatest penury in the midst of a country producing everything which the wants of the most luxurious can require. Either the population is too great; or their system of rural economy must be radically bad. The evil, indeed, seems to arise from the universal prevalence of the *mezzeria*, or half and half system, by which all the farms are held, and which seems expressly calculated to depress the farmer, and keep him in a state of hopeless poverty. The finest part of Tuscany is the valley of the Arno, which is everywhere most carefully cultivated; but with all the advantages of a rich soil, and temperate climate, adapted to the vine and the olive, the land does not yield more food for the support of man than in countries twelve or fourteen degrees farther north, countries which labour under all the disadvantages of a long and severe winter, of a spring which hardly deserves the name, and of a summer and autumn during which the inconstancy of the climate is severely felt. Tuscany was formerly celebrated for its high state of cultivation, and is still highly cultivated; but the quantity of labour expended is quite disproportioned to the result; the greater part of the produce is consumed by the labourer; the methods pursued are eminently unscientific; the capital swallowed up by the land is enormous; and every species of cultivation which does not contribute to supply the direct home consumption of the country is neglected. The forests have been destroyed or badly managed; mulberry-trees, which the country would produce in abundance, are not in favour with the cultivators, because they spoil the fields and contribute nothing to the use of the table. The rearing of silk-worms is not attended to; the production of silk is much less considerable than it might be; and the same may be said of every other article which is available only for exportation. In former times many of the Tuscan wines were celebrated for their excellence; but at present, though a vast quantity of wine is made, and is generally of good quality, the sole purpose of the cultivator is to render it suitable for home consumption. The culture of the vine is accordingly subordinate to that of the olive, the mulberry-tree, and grain, or is considered at best as only of equal importance; the vine being produced on the same lands, and subjected to a treatment quite unsuited to its perfect developement. Little pains are taken at the vintage, and the process of wine-making is still the same which has existed for generations. Of late, however, there seems a disposition to take measures for the better cultivation of the grape, and the more careful preparation of the wine; and, if successful, it may yet become an object of no small commercial importance.

The mezzeria system has existed from time immemorial, and is the only one understood in Tuscany; but it is costly in the extreme. Agriculture gives no fair return for capital; for, after deducting all expenses the proprietor does not receive more than a third of the produce, while the outlay for his half generally amounts to two-fifths or even three fifths of the total expense. Landed proprietors were formerly the wealthiest class of society, but relatively to other capitalists, they are now impoverished, and cannot compete with people whose fortunes are not vested in hereditary estates. One of the causes of the poverty of the Tuscan proprietors is the great number and expense of buildings required on their farms, where the houses of the peasants are of a very superior description, and have been mostly rebuilt within the last sixty years. The number of buildings too required for their villas, and the expense of maintaining them are ruinous to the owners, more especially now when comfort is as much an object of attention as grandeur was formerly.

Besides the Val d'Arno, and the hills, to which cultivation has been hitherto chiefly confined, there are in Tuscany two extensive fertile plains, the Val di Chiana, and the Maremme, which till lately were quite neglected. In the Val di Chiana, however, through the success of hydraulic operations, large tracts of country have lost their pestilential character, and lands formerly useless have been turned into profitable estates. The Maremme, too, which had been uninhabitable for centuries, during many months of the year, through the effects of malaria, have been for several years the object of special attention on the part of the Grand-duke. A large expenditure has been devoted to their improvement; satisfactory results have been obtained in many districts, and are anticipated in all. Abandoned by man, the destructive energies of nature had for ages been contributing to make the Maremme what Dante has called them, a fit image of hell, the abode of desolation, disease, and death; but their present state is an interesting example of the power of art to arrest the devastations of nature, and to bring the very elements of ruin to contribute to healthful and profitable results. The contrast between their late and their former state is almost without example. They were the richest, and perhaps the most densely peopled part of ancient Italy. The most renowned cities of Etruria occupied districts, which for centuries have been encroached upon by pestiferous lakes and marshes, and covered with weeds, canes, and reeds. The climate, renowned in former times for its beauty and salubrity, had become pestilential; but cultivation is again gradually extending; capital is being invested; a laborious population is constantly narrowing the circle of the former seats of desolation; and the cares of Government aiding the progress of improvement by a liberal expenditure, promise ultimately to restore to profitable use large tracts which had been neglected as valueless, or abandoned as uninhabitable. Wheat is abundantly grown on spots, which only a few years ago afforded a scanty subsistence to a few wandering fishermen; and it is not unworthy of remark, that while miles of fertile ground have been won from waste and pestilence by the deepening of rivers,

and the draining of marshes, the confining of the streams and lakes to narrow and defined limits has enabled the fishermen to obtain greater supplies of fish, with diminished toil and danger; so that the rent now paid to the Government by those who farm the fisheries, is greater than at any former period. The Maremme offer many attractions to cultivation and to capital. They possess the greatest variety of temperature and soil; the hills which skirt the level lands are rich in mineral productions; and, when the cross roads shall have facilitated intercourse with the main branches of communication, and the clearing of the brushwood, the forests, and the marshes shall have made the country inhabitable throughout the year, abundant employment will be found for capital and labour in new and lucrative enterprize. But vast estates throughout the Maremme, are still in the hands of a poor nobility, whose principal rental is derived from wood-cutting, and from the pasturage of flocks of sheep and goats which descend from the mountains in winter, and feed in the plains. Of sheep alone the annual migration is said to be from 60,000 to 80,000. Herds of buffaloes and other horned cattle are also frequently met with, and form another source of revenue; but the want of capital is everywhere visible, and the decay of the ancient aristocracy may be traced in the neglect or the gradual transfer of their large possessions. The great works for clearing and draining the Maremme were commenced in January 1829, and by July 1832, nearly £200,000 sterling had been expended in clearing and giving new directions to river courses, filling up the beds of lakes and marshes with the deposits of the rivers, in making roads and bridges, and the necessary buildings. One of the most remarkable improvements is the making of an excellent road along the west coast, where formerly not a dwelling was to be found through extensive tracts; but inns and other houses are now building, and the Government has frequently, as an encouragement to settlers, granted small pieces of land to those who have built houses. A universal opinion prevails that the pestiferous character of the marshes has been already much modified; great part of the marshy lands have been brought in and prepared for cultivation, and population is gradually spreading over a country formerly abandoned.

Most of the lands in the *Agro Romano*, or territory of the Roman State, as generally in the Maremme, are divided into large properties, though the extent varies much, generally from 1200 to 2400 acres. All the country from the Apennines to the Mediterranean is divided into possessions of considerable size, except in the suburban districts, and in the neighbourhood of the towns and villages, where there are small estates belonging to petty proprietors who often cultivate them with their own hands. But the number of wealthy proprietors is small; perhaps there are not twenty landlords of ample fortune. The large estates are for the most part held in mortmain. In the Adriatic marshes, and in the districts of Ferrara and Ravenna, the land is divided into large properties; elsewhere there is a greater subdivision. Agriculture is in apparent prosperity; but the majority of the landowners are poor; a few only are in easy circumstances; and the opulent are rare indeed. The value of land is infinitely various; but speaking generally, the most profitable agricultural pursuit, especially in the Maremme, is the grazing of cattle; and in the neighbourhood of Rome, hay is found to be the crop which produces the best return. In the Maremme the land is often left to repose for from three to seven years, during which time it is clothed with verdure. Agriculture is in a very backward state, owing to the want of instruction where the people are numerous, and, in the marshes, to the want of labourers. The agricultural labourers have no education whatever, and no means of acquiring it, though their natural aptitude is excellent. In the Maremme they live poorly; but in other parts of the country somewhat better. They seldom eat animal food; but use, for the most part, maize bread and polenta. Beans and pulse, as well as other vegetables, form ordinary articles of food. Their beverage is pischetta, a mixture of wine and water, in winter, and wine in summer. The coloni (farmers) are generally in debt to their landlords, whose portion of the charges of cultivation is more than they can bear, and they are often insolvent; so that the nominal returns for property held on mezzeria is seldom borne out by the results, and the consequence is a reduction of all the portion with which the farmer is overcharged. There are indeed many cases in which the amount received by the landlord is not one-sixth, instead of one-half, of the produce. The cattle of the Roman states are nearly sufficient for the ordinary consumption. Horses are exported; and there is a small importation of oxen and swine. The breed of sheep is increasing, and the supply of wool for foreign markets is greatly augmenting. Nothing can be more rude than the agricultural implements; heavy custom-duties prevent the introduction of those of foreign manufacture, and the useful arts are too little advanced to allow production of them at home. The impediments to agricultural improvement are numerous; the political situation of the country and its sad misgovernment; the protective system, which retards advancement; the want of capital; the scanty population of the Maremme, and the mezzeria system elsewhere; the want of knowledge, and more especially of agricultural knowledge among the cultivators; mortmain; the oppressive taxation, which falls particularly upon agricultural produce, and the difficulty of sales from the many restrictions. Indeed, says Sir William Gell, "at Rome, the expenses of cultivation, and the pressure of taxes are scarcely met by the sale of the produce of the soil; and grain from the Black Sea is often cheaper than that produced at home, in most of the commercial cities of Italy."—(*Top. of Rome*, I. 253.) The people, however, are neither indolent nor unwilling to improve their condition; much activity and perseverance have been exercised; a general desire for improvement has been shown; a general conviction that great changes are necessary has been manifested; but the requisite intelligence is wanting. The smaller lakes in the Maremme have been drained, little has yet been done for the larger; there is still a vast field for useful and profitable exertion; but numerous impediments have hitherto checked it. The principal productions of the territory are corn, wheat and maize, rice, hemp, wine, vinegar, brandy, oil, timber, charcoal, and tobacco, and culinary vegetables, apples, cucumbers, melons, garlic, onions, potatoes, flax, seeds, and oleaginous vegetables, dyewoods, bark, potash, hay, soda, mulberry-trees, anniseed, &c., cattle and sheep, wool, cheese, hides, bacon, hams, lard, butter, silk, wax, honey, tallow, horns, bones. Buffaloes, goats, mules, and other animals for carriage are to be found, but not in large numbers. Domestic poultry and game are produced in abundance.

In the kingdom of Naples there are three distinct systems of agriculture pursued, according to the nature of the climate and the soil of the mountains and the plains. The greater part of the surface of the kingdom is limestone, chiefly of a bluish colour and easily decomposed, which affords a soil favourable to the labours of the farmer. By far the greater part is mountainous, being covered by the Apennines and their branches; but there are two extensive tracts of level country, the one upon the Adriatic, and the other upon the Mediterranean, forming the plains of Apulia and Campania. There is a great want of rivers to supply to any extent the means of irrigation; but the fall of rain, which is very considerable, and which is heavier upon the western than upon the eastern slope of the Apennines, supplies their place. Nearly every species of plant peculiar to the torrid or the temperate zone is found in suitable sites; the palm-tree and the cactus flourish almost by the side of the oak and the fir; the cotton plant divides the field with hemp and flax. On the less elevated spots all the varieties of the orange and the lemon attain perfection; the olive "swells with floods of oil;" and the vine, allowed to extend its graceful tendrils from tree to tree, affords equal delight to the eye and to the palate. A peculiarity of Neapolitan agriculture is, that the soil produces a greater crop of cerealia and grass when protected by trees from the burning rays of the summer sun, than when left open and unprotected. Hence, the cultivation of the vine, the olive, and the mulberry is most advan-

taneously combined with arable husbandry. In the best cultivated provinces the fields are covered with elms or poplars, on which the vines are trained, or with olive-trees planted in rows. The mulberry-tree is only planted extensively in Calabria; but, as it affords a most profitable crop with a small amount of labour, it is gradually spreading in the other provinces with the increase of the population. The farms in the elevated districts are small, varying in extent from one and a half to seven acres, and are almost all cultivated by manual labour. The principal articles raised are wheat, barley, potatoes, beans, rye, maize, and culinary vegetables; rye and barley only succeed in elevated spots, and spelt is sometimes, but much more sparingly cultivated. The system of agriculture practised in Campania is peculiar, and is considerably different from that of the hills. This district includes the seacoast of the Bays of Gaeta and Naples, between the Garigliano and Sorrento, with Ischia, Procida, and the smaller neighbouring islands, and stretches eastward to the main chain of the Apennines near Cava, Nola, and Avellino, including Benevento, and is distinguished as the region of active and extinct volcanoes. Its greatest length is about 69 miles, and its greatest breadth, from Benevento to the extremity of Ischia, about 50. Thus the whole of the province of Naples, and great part of the Terra di Lavora are included in the district. The soil of the extensive plain of Capua is composed of what has been called secondary tufa, to distinguish it from the more ancient or primitive tufa of Ischia, Procida, and the Vomero near Naples. Both kinds of tufa yield a most productive soil, easily decomposed, and of considerable depth in the plains. As the high road from Rome to Naples lies through the plain of Capua, the luxuriant vegetation of this part of Italy strikes involuntarily the most superficial traveller, who there sees flourishing crops of grain waving under the shade of myriads of olive-trees, and vine-clad elms or poplars. On the heights near Naples, cultivation is so admirably managed, that in some of the villas at Capo di Monte, three crops are actually produced at once, by the addition of the lofty pine, whose roof-like foliage towers so far above the vines, that it deprives them of but a small portion of the sunshine, while the delicate fruit which the former yields, is a most welcome addition to the juice of the latter in the dessert of the connoisseur. The valley of the Sebeto, between Capo di Monte and Vesuvius, is one continued garden, from which the markets of the capital are supplied; the sides of the volcano are covered with the vineyards, which yield delicious lacryma christi, a species of wine, which, like that of Pozzuoli, near the Solfatara, is said to owe its superior flavour, in a great measure, to the influence of the subterraneous heat. The population in this volcanic region is very dense; land is divided into farms of a middling size, and the abundance of manure causes the ground to be kept in an almost unremitting state of productiveness. The third system of agriculture is that pursued in Apulia, or the plains which extend from the foot of the Apennines to the Adriatic. From time immemorial this district seems to have been resorted to by the shepherds of the adjacent mountains; and now by a system of laws and regulations called the *tavogliere*, of the same nature with those of the Spanish mesta, and equally mischievous, the owners of the flocks and herds of the mountains have the established right of transporting them to the plains for winter pasturage; and to this singular institution the kingdom is indebted for a peculiar system of agriculture which prevails in the three provinces of Capitanata, Terra di Bari, and Terra di Otranto, where the farms are usually divided into three equal portions, one of which is under seed, the second fallow, and the third in repose, or waste. On the two latter the right of pasture is exercised by the tavogliere; and thus a tract of country containing two millions of acres is not only doomed to partial sterility, but is the cause of unproductiveness in all the adjoining provinces, from which it attracts the cattle, and in which it consequently prevents the accumulation of the means of giving fertility to the exhausted soil. Under the French domination the system of the Tavogliere di Puglia was abolished; but after the restoration of 1815, it was restored with its ancient local privileges, roads, resting-places, and the whole apparatus of administration. The total area of the kingdom of Naples is reckoned to contain about twenty millions of acres, of which one-fifth is occupied by towns, villages, roads, water, and places incapable of cultivation, and nearly one-eighth by forests, leaving 13,635,000 acres of cultivable soil, of which nearly twelve millions are found by the returns of the land-tax to be actually cultivated, or at least occupied; and as the population in 1836 was 5,781,036, this extent of land ought, with proper management, not only to suffice for their support, but also to yield a considerable surplus. But in the present state of matters, the periodical wanderings of the cattle not only deprive the farmer of manure, but dispose him to adapt his stock to the prevalent system, by preferring sheep, which are most easily managed at a distance, and which require no dairy establishment; and the consequence is, that the crops of corn, so far from sufficing for the support of the population, are actually deficient. In 1835, the number of live stock in the continental part of the kingdom of the two Sicilies was thus estimated approximatively. Beeves, 300,000; buffaloes, 40,000; horses, 60,000; mules and asses, 600,000; goats, 600,000; sheep, 4,000,000.*

Mines and Minerals.—The minerals of Italy are of small amount; and, though mines of gold, silver, and copper, were once wrought, they are now almost all extinct. It yields at present some alum in the States of the Church and Naples, some vitriol and antimony in Parma, and sulphur in the kingdom of Naples. In Lombardy, mining operations are confined to the procuring of iron in the Alpine valleys of Bergamo and Brescia, and of copper in Belluno. In Tuscany there are a great variety of minerals, which were once extensively wrought; but a large proportion of the mines have been abandoned. The most important are the iron mines of Elba, which are deemed inexhaustible. For a period of ten years, from 1825 to 1834, the quantity of ore produced annually was 1600 centi (each 25,000 lbs.), of which 700 centi were consumed in Tuscany, and the rest exported, chiefly to Rome, Genoa, Naples, and Corsica. At Perita, in the province of Grosseto, is a sulphur mine, which, for ten years, gave an annual produce of 413,000 lbs., but is capable of being greatly increased by a growing demand. At Monte Catini, in the valley of the Cecina, is a copper mine, producing 100,000 lbs. per annum, and there are other copper mines at Montieri, the produce of which is not known. The territory of Pietra Santa contains mines of iron and silver, and is rich in marbles, of which there are twelve quarries in operation, one of them yielding statuary marble equal to that of Carrara. In the Volterra district, near Pomerance, the lagoons of Monte Cerboli furnish boracic acid, which is ingeniously and economically obtained by impregnating the water with the gas which issues copiously from the ground. The produce is, in ordinary years, about 600,000 lbs., of which 100,000 lbs. are manufactured into borax, and the remainder exported to foreign countries. In the Volterra districts are numerous quarries of alabaster in full activity; stone for building, paving, and other ordinary purposes of life, is abundant; and also gravel, the employment of which is one main cause of the excellence of the Tuscan roads. The granite quarries of Elba and Giglio, which furnished the columns

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* *Lettres ecrites d' Italie, en* 1812 *et* 1813, par F. S. de Chateauvieux. Paris, 1816.—*Tableau de l' Agriculture Toscane*, by J. C. L. Sismondi. Geneva, 1801.—*Economia Rustica per lo regno di Napoli, &c.* Di Luigi Granata. Naples, 1835.—*Saggio Politico su la popolazione e le pubbliche contribuzione de Regno delle due Sicilie al di qua del Faro*, Di M. Le Rotondi. Naples, 1834.—*Report on the Statistics of Tuscany, Lucca, the Pontifical, and the Lombardo-Venetian States, &c.* by John Bowring. London, 1837.—*Edinburgh Review*, "Agriculture and Statistics of Italy." Vol. XXVIII. 31.—*British and Foreign Review*, "Neapolitan Systems of Farming." IX. 507.—*Encyclopædia Britannica*, article "Lombardy."

so often found in the ancient buildings of Tuscany, are still capable of yielding similar materials. Travertine abounds in many parts of Tuscany; near Pisa, and in various parts of the Maremme, and in the territory of Siena, are marble quarries, wrought according to circumstances. At Monteoni is an alum mine; and in the Maremme are lead mines which are unwrought. In Lucca and the States of the Church are some mines, and numerous indications of metals and minerals, but they are little wrought, and in the latter State no accurate estimate exists of the quantity of minerals produced or worked; pozzalana, however, is both used at home and exported to some extent for subaquatic works; the Viterbo vitriol mines give more than 40,000 lbs. annually, one-half of which is exported; there are many mines of fossil coal, some of which have been wrought, but they are now utterly neglected. About 4,000,000 lbs. of sulphur is dug in Romagna, Pesaro, and Tormignano; but the government works only the alum mines, which are found at Tolfa; all others are private undertakings. There are many salt springs in Romagna and the Marche (frontiers), and a quantity of salubrious mineral waters, both hot and cold. Those of Porretta, near Bologna, are particularly esteemed; and those of Aqua Santa, in Rome, and in the neighbourhood of Ascoli, of Civita Vecchia, Riolo, Nocera, and Stigliano. Of Naples, the mineral productions are unimportant; and consist chiefly of some iron, extracted from mines in the vicinity of Stilo; with mines of rock salt, which are little worked. The province of Massa, in the Duchy of Modena, produces the excellent statuary marble found in the quarries of Carrara.

Fisheries.—The fisheries contribute largely to the supply of food in Italy. The most considerable are those for the tunny, a very large fish, and the anchovy, which is very small. These are conducted on a very large scale by joint stock companies, composed of almost all the inhabitants of the coasts where they are carried on, and more part cularly along the vast extent of the Neapolitan shores. The lakes and rivers likewise yield a considerable quantity. The tunny is a gregarious fish, shoals of which enter the Mediterranean early in the year, and are caught in great abundance with nets, on the Italian coasts, in May, June, and July. The anchovy fishery is chiefly carried on for the sake of foreign trade; the fish are caught in shallow water in March, April, and May, and the curing of them occupies about a month. Sword fish are also taken with the harpoon, in the straits of Messina, and sometimes in the tunny nets; their flesh is esteemed very delicate, and when broiled resembles veal. The coast also swarms with mullets, the roes of which are converted into a sauce called botarga, which is in great request. A great variety of testaceous and crustaceous fish, among which are prawns of gigantic size, is taken along the whole coast.

Manufactures and Trade.—The manufactures of Italy are comparatively unimportant; but those of Lombardy and Venice are extensive. The manufacture of silk gives the most extensive employment; but great numbers of people are also employed in the linen and woollen trades, in both of which branches the use of machinery has been widely diffused. Woollen goods of almost every kind are manufactured in the delegations of Venice, Padua, and Como. Milan has long been celebrated for its weapons and arms, and iron work of all kinds is still extensively carried on. Besides these greater branches, most of the smaller departments are also carried on, especially those of paper, glass, gold and silver articles, and domestic utensils. The foreign trade of Lombardy is not great; that of Venice has much declined since its annexation to Austria. There are still many ships navigating the Adriatic and Mediterranean seas, under the Austrian flag, which are built and equipped at Venice.

In Tuscany the fundamental maxim of commercial legislation is, that trade and industry should be unfettered; it is, however, essentially an agricultural country, and the manufactures are unimportant. The principal articles are organzine and manufactured silks, and straw-hats and tresses. The principal articles of import trade are corn and grain from Odessa and Alexandria; superior wines from Spain and France; colonial produce, of which the consumption has greatly increased; woollen and cotton manufactures from France, England, Belgium, and Switzerland; wrought iron, chiefly from England; high bred horses, articles of fashion, hardware, &c.; wool from the Levant. The principal articles of export are, oil; silk, both raw and manufactured; kid and lamb skins; tartar, potash, charcoal, firewood, timber, corkwood, staves, bark for tanning; iron ore from Elba; marble and alabaster, wrought and unwrought; straw-hats, and straw for platting; woollen caps for the Levant; paper, and works of art; borax, alum, sulphur; worked coral, tallow, and bacon. But the free nature of the trade necessarily prevents the publication of accurate or even approximative returns of its amount and value.

In the States of the Church, the population in general is agricultural rather than manufacturing; for its manufactures there is little demand abroad; they serve only for home consumption. The principal manufacture is that of woollens of ordinary quality, of which Rome is the most important seat. Next in importance is the manufacture of hats, which are well made everywhere, but especially in the capital. There are manufactories of silk and ribbons at Rome, Bologna, Camerino, Perugia, Pesaro, Ascoli, and Ancona; and of tanned and dressed leather at Rome and other principal cities; hemp and flax are also manufactured to considerable amount, but only in public schools, orphan asylums, or private houses; the paper manufacture is considerable, and is increasing; there are many ironworks, though the ore used in them is imported; the brass pins of Urbino are famous; and there are brass, copper, and other metallic works in various places. The abundance of sulphur, and its excellent quality, has led to the establishment of vitriol manufactories at Bologna and elsewhere. It may, however, be stated generally, that the following manufactures, though they exist in the country, are not in a prosperous state, namely, woollens, silk veils, leather, gloves, cotton, and alum. Those which flourish are hats, some silk goods, paper, screws, and sulphur. The manufacture of fine cloths in Bologna has ceased. The principal articles of export are: corn, hemp, olive oil, charcoal, planks, tobacco, wood, garlic and onions, aniseed, pine kernels, saffron, bark for tanning, linseed oil, vinegar, tartar, potash, soda, wool, cheese, skins to a great amount, wrought silk, horns, bones, honey, tallow, lard, and fat. Nearly 50,000 sheep and 40,000 swine are annually exported from the provinces of Perugia and Viterbo to Lombardy, Venice, Tuscany, and Illyria, and the number would be larger, but for the heavy duties imposed by Austria. Perugia and Romagna export oxen to Tuscany, the maritime and rural districts, to Naples, altogether about 10,000 yearly. There is an export trade in horses to Naples, Tuscany, and Lombardy. With respect to imports, the character of the country must be kept in mind; not only the quality of the soil, but the fact that a chain of mountains traverses the country, making the north-east almost inaccessible to the south, so that while one part of the State is exporting, the other may be importing the same sort of articles. This arises from the difficulty, delay, and cost of carriage. Thus in the north-eastern districts there is an importation of oil from Naples and Tuscany, wood for building and fuel, and charcoal from Tyrol, Illyria, Dalmatia, and Venice. The imports, generally speaking, consist of a great variety of the productions of the neighbouring countries, and of colonial produce principally from England and France.

The manufactures of Naples are chiefly of the domestic kind. The women spin the flax, hemp, and wool; and the coarse cloths made from those substances suffice for the greater part of the population. There are manufactures of coarse woollen and cotton goods in many of the towns. Silk goods are manufactured in larger establishments than those engaged in other articles of trade. Leather,

paper, hardware, glass, earthenware, and porcelain, mostly of inferior workmanship, and in small quantities, are also made in different places. The condition of the great body of the people forces them to be content with the coarsest clothing, with few articles of domestic furniture, or even cooking utensils, and to procure what they do use of the cheapest and most durable kind. No country in Europe has so little foreign trade, in proportion to its extent and population. It produces almost everything that is necessary for the use of its inhabitants, and has a very insignificant surplus to give in exchange for the few luxuries which the condition of the people requires. The foreign trade centres chiefly in the city of Naples, to which the greater portion of the surplus products are brought by small coasting vessels, and where the foreign commodities required are also procured.

Before the seventeenth century, Genoa was the centre of all the supply of manufactured silks and velvets to the other parts of Europe; but at present the manufacturing industry, so far as regards silk, is reduced to the extent of supplying the home consumption, or preparing the raw material for the manufactories of France, England, Holland, Germany, and Russia. The Sardinian States generally have sufficient manufactures to supply with silk, linen, or woollen goods, the home demand. The Sardinian silks are handsome and strong, especially the stockings; but from the want of the best kinds of machinery in producing them, they are dearer than elsewhere. Leather, iron-goods, copperware, glass, pottery, and smaller domestic articles, are also manufactured. The most valuable article of export is silk, which is mostly transported by land-carriage to France and Germany. Olive oil is also largely exported from Genoa, after being collected there from the adjoining coasts. Rice, fruit, soap, white-lead, essences, and perfumery, are also exported to some extent; and there is besides a considerable transit trade carried on through Genoa, by which the products of the other parts of Italy are exchanged for those of France, to the advantage of the commission houses in that city. The principal articles of import consist of sugar, coffee, spices, cotton-wool, manufactured cotton, indigo, cochineal, and other dying stuffs, corn, salt fish, salt, hides and leather, iron, steel, lead, copper, pitch and tar, tobacco, timber, besides many smaller articles. The trade in grain is casual, depending in a great degree upon the Swiss harvests, to supply the deficiencies of which, when they occur, corn, chiefly wheat, from Odessa and Taganrog, is imported through the Sardinian territory. The Genoese are active and enterprising, and trade to the most remote parts of the world.

INTERNAL COMMUNICATION.—The roads throughout northern and central Italy are generally well made, and kept in excellent order; and there being little navigable water communication, the practice of land-transport has become almost universal. A railway from Venice to Milan, 166 miles in length, is in the course of being made with great rapidity; it will be almost on a dead level, and will, no doubt, greatly facilitate the internal communication of Lombardy. Several great roads have been constructed over the Alps, so that communication between the north of Italy and the tramontane countries is now almost entirely divested of the character of difficulty and danger, which made it scarcely practicable even in the few places where it was attempted. The principal of these roads are, that called the *Cornice*, leading along the coast from Nice to Genoa, and in some places cut like a shelf on the face of precipices which overhang the sea; the road of Mont Cenis, extending from Lanslebourg in Savoy, to Susa in Piedmont, commenced by Napoleon, was completed by the Sardinian government, and rises to an elevation of 2,100 metres (6,773 feet) above the level of the sea; the great road over the Simplon, was constructed by order of Buonaparte, and made easily passable by carriages, but was in some places nearly destroyed by recent storms (1839-40); and the roads over the Splugen, the pass of Finstermunz, and the Wurmser Joch, leading to the Lake of Como, constructed by the Austrian government, and not surpassed, if indeed they are equalled by any undertaking of the kind elsewhere. There are also passable roads at Mont St. Gothard, Great St. Bernard, and Little St. Bernard.

Lombardy abounds with innumerable canals, some of which are navigable, but they are principally used for the purposes of irrigation. The most ancient, as well as the most considerable of these, is the Naviglio Grande, which was opened in the year 1270, and extends from the Ticino to Milan. The Nuovo Naviglio di Pavia, which was completed in 1819, extends from Milan to Pavia, where it falls into the Adda, a little above its confluence with the Po, and thus places Milan in direct communication with the seaports of Goro, Chioggio, and Venice, by means of the Po and its branches, connected by canals with the lagoons of Venice, and the rivers Adige and Brenta.

In Tuscany, the Arno is usually, though not always navigable between Florence and the sea. There are canals from Pisa to Leghorn; from Pisa to the Serchio, the lake of Bientino, and that of Fiocchio, which communicates with the Arno; parts of the Serchio, Bizenzio, Ombrone, and other rivers, are also navigable.

TOPOGRAPHY.—Italy is divided, into seven independent States, which we shall now proceed to describe in the following order: 1. States of the King of Sardinia; 2. The Lombardo-Venetian kingdom, or kingdom of Lombardy and Venice; 3. The duchy of Parma; 4. The duchy of Modena; 5. The Grand-duchy of Tuscany; 6. The States of the Church; 7. The kingdom of Naples; 8. The islands of Sicily, Malta, Gozo, and Comino.

§ 1. *States of the King of Sardinia.*

The Sardinian dominions consist of two distinct portions, the continental and the insular. The latter comprises the Island of Sardinia; the former occupies the north-western portion of Italy, adjoining France and Switzerland, and consists of three distinct parts; 1. The Principality of Piedmont, the Duchies of Aosta and Monferrat, the Lordship of Vercelli, the County of Asti, the Marquisate of Saluzzo, a part of the Duchy of Milan, and the imperial fiefs of Canavese, all in the basin of the Po, and forming the upper or western part of Lombardy; 2. The Principality of Nice and the Duchy of Genoa, lying along the Mediterranean sea, and bounded on the west and north by the Alps and Apennines; 3. the Duchy of Savoy, on the north-west side of the Alps, beyond the proper limits of Italy.

The Continental States contained in 1818, 3,439,000 inhabitants; and in 1839, about 4,000,000. There are 72 towns and 2,632 villages. Institutions for the support of the poor, the relief of the sick, &c. are very numerous; and there are no less than 18,365 children maintained in foundling hospitals. The financial system is one of the best regulated in Europe. A yearly budget is drawn up; and there is every year a surplus of revenue. The estimate of revenue for 1839 amounted to 73,600,000 lire (£2,913,333), and of expenditure, to 74,474,000 (£2,946,678), but the revenue always produces from four to eight millions beyond the estimate. Salt and tobacco are royal monopolies. The public debt amounts to 152,000,000 lire (£6,016,666, 13s. 4d.), the interest of which is punctually paid; and the securities enjoy great confidence, and rarely appear in the market. The government is vested absolutely in the king, who is assisted by a council of state, consisting of a president and fourteen ordinary members. In each province the sole power of government is placed in the hands of an intendant, without a council to controul him. Inferior intendants are appointed to the towns and

districts. The system of education is in a very low condition; elementary schools are still wanting in many places, and, where they exist, they are under the superintendence of ignorant and ill-paid teachers. The clergy are endeavouring to obtain the exclusive direction of public instruction, and to regulate it entirely in conformity with their own views. These they proclaim to be holy, Christian, and anti-revolutionary; but many complain that every advance of science is looked upon by them with jealousy, that freedom of opinion is treated as heresy, the ignorance of the people considered as advantageous to the government, and passive obedience lauded as the highest degree of virtue. There is in Turin one principal university, with four faculties; and there are secondary universities at Chambery, Asti, Mondovi, Nice, Novara, Saluzzo, and Vercelli, either for the study of medicine only, or for medicine and jurisprudence. Chambers of commerce and of agriculture have been established at Turin, Genoa, Chambery, and Nice; which are composed of landowners, bankers, merchants, and manufacturers. From time to time, public exhibitions take place of the productions of the national industry. The Piedmontese are distinguished above all the other Italians for their energy of character, their extraordinary industry, their devotion to literary inquiry, the regularity of the state economy, the efficiency of their army, and the activity of the people.—*Baumer's Italy.*

The continental territory is divided, for administrative purposes into eight general intendancies, subdivided into forty sub-intendancies. The general intendancies are likewise co-extensive with the eight military divisions of this part of the kingdom.

Names of the Gen. Intend.	*Cities, Towns, &c.*
TORINO,.....	TORINO (*Turin*), 114:* Venariarcale, 3; Stupinigi, Superga, Rivoli, 5; Chivasso, 7; Carignano, 7; Moncalieri, 7; Biella, 7; Ivrea, 8; Caluso, 5; Locana, 5; Pinerolo, 12; Fenestrelle, 1; Villafranca di Piedmonte, 8; Susa, 3; Exilles, 1; Giaveno, 7.
CUNEO,.....	Cuneo or Coni, 18; Busca, 8; Fossano, 13; Chiusa, 5; Alba, 7; Bra, 11; Mondovi, 16; Cherasco, 8; Saluzzo, 12; Savigliano, 15; Barge, 8; Racconigi, 10.
ALESSANDRIA,	Alessandria, 35; San Salvadore, 5; Valenza, 6; Asti, 22; San Damiano, 6; Acqui, 5; Nizza, 3; Casale, 16; Tortona, 9; Caltelnuovo, 6; Voghera, 11.
NOVARA,.....	Novara, 15; Borgomanero, 6; Mortara, 4; Vigevano, 12; Domo d' Ossola, 1; Pallanza, 2; Arona, 2; Varalla, 5; Borgo-Sesia, 3; Vercelli, 15; Trino, 7.
AOSTA,.....	Aosta, 6; Donnas, 1; St. Vincent, 2; Courmayeur, 1.
NIZZA,.....	Nizza (*Nice*), 26; Villafranca, 3; Sospello, 4; Oneglia, 5; Porto-Maurizio, 5; San Remo, 11; Vintimiglia, 5.
GENOVA,.....	Genova (*Genoa*), 113; Voltri, 7; Savona, 12; San Remo, 15; Cairo, 3; Albenga, 4; Finale-Marina, 3; Novi, 10; Gavi, 1; Bobbio, 3; Chiavari, 10; Spezzia, 8; Sarzana, 8; Porto-Maurizio.
SAVOIA,..... (SAVOY)	Chambery, 11; Aix, 3; Montmeillan, 1; Les Eschelles, 1; L'Hopital, 1; Conflans, 2; St. Julien 1; Thonon, 4; Bonneville, 12; Cluse, 2; Annecy, 6; St. Jean-Maurienne, 3; Lesseillon, Montiers, 2; Faverge, 2.

1. *Intendancy of Torino.*—TORINO (TURIN), the capital of the kingdom, is situate on the left bank of the Po, near its confluence with the Dora Riparia, and is one of the most regularly-built cities in Europe, particularly in the new town, which is called Nuovo Torino. It contains about 110 churches and chapels, some of which are remarkable for their architecture, and the splendour and taste of their ornaments, though now little calculated to strike the traveller by their magnificence. Turin is the see of an archbishop, and the seat of the senate of Piedmont, or supreme civil tribunal for the provinces of Turin, Coni, Alessandria, Novara, and Aosta; and has also a fine mint. In respect of its scientific and literary establishments, Turin holds the first rank among the cities of Italy; of these the principal are, the university, the best frequented in Italy; the military academy, with 33 professors and eight masters; the royal academy of sciences, one of the most celebrated in Europe; the royal agrarian society; the royal academy of the fine arts; the royal historical society; the philharmonic academy; the library of the university, one of the richest in Italy; the superb museum of Egyptian antiquities, containing upwards of 8000 articles, chiefly collected by M. Drovetti, and considered by Champollion as the first in Europe in respect of historical monuments; the fine botanic garden of Valentino; and the hydraulic building (edificio hydraulico), a unique institution, where in the months of May and June a course of lectures is given on hydraulics, illustrated by experiments with large masses of water; and the experimental garden of the agricultural society, which also contains rich collections of objects of natural history, agricultural implements, and machinery, and a library of the best works on agriculture and botany. There are several walks round Turin remarkable for their beauty; and in the delightful neighbourhood rises the chain of heights named the *Collina*, adorned with superb villas, and within a radius of a few miles are several small towns and places both beautiful and interesting, as the royal palace of *Stupinigi*, one of the finest summer houses in Europe; the *Venaria reale*, a small town, with a veterinary school, a riding school, and a stud; *La Superga*, five miles from the city, a magnificent church built on an eminence, from which there is a fine view; it is now the mausoleum of the royal family. *Aglie, Ricoli, Moncalieri*, three small towns, with royal palaces or chateaux; *Chieri*, a busy little town on the slope of a hill, which in the middle ages, acted a conspicuous part among the republics of Upper Italy; and the *Villa Madame*, a royal pleasure house, with fine gardens and terraces. Population of the city exceeds 114,000. To the south-west of Turin are the three valleys of the Vaudois or Waldenses. *La Tour*, the chief town, is 36 miles from Turin, and 14 from Pinerolo. They now contain only thirteen parish churches.

2. *Intendancy of Cuneo.*—CUNEO or CONI, a large episcopal city, with considerable trade, 50 miles S by W. of Turin, formerly an important fortress, the works of which have been demolished. *Fossano*, an episcopal city, noted for its baths, silk works, and a royal academy of the Belles Lettres. *Vinadio*, a small town, noted for the baths, and for an argentiferous lead mine in its vicinity.

3. *Intendancy of Alessandria.*—ALESSANDRIA, a large town, and recently one of the principal fortresses in Europe, situate on the right bank of the Tanaro, near its confluence with the Bormida. It is well built, has numerous churches, palaces, and hospitals, with manufactures of cloth and linen, and some trade. The strong citadel still remains, but all the rest of the fortifications have been demolished. To the south-east of the town is the village and battle field of *Marengo*, where Buonaparte gained a great victory over the Austrians in 1800.

4. *Intendancy of Novara.*—NOVARA, an episcopal city, with considerable trade and an industrious population, 30 miles W. of Milan. *Arona*, a small but well-built commercial town, on Lake Maggiore; near which is a colossal statue of San Carlo Borromeo, a native of the town, erected by the people of Milan in 1697. The statue is 66 feet high, and raised upon a pedestal of 46 feet. The head, hands, and feet are cast: but the drapery, and the book which he holds in his hand, are formed of sheet copper, set on timber framing. The work is beautiful and well-executed, and contains a staircase which

* The figures denote *thousands*.

leads to the top. *Vercelli*, an archiepiscopal city, formerly rich and flourishing, with some fine buildings and a public library.

5. *Intendancy of Aosta.*—AOSTA, a small episcopal city, situate where the roads of the Great and the Little St. Bernard meet, contains a Roman triumphal arch, and the remains of an amphitheatre. *Gressan*, a small town, with rich iron mines. *Pré-St. Didier*, a small place, near Mont Blanc, with warm ferruginous springs, frequented by the Piedmontese. *Courmayeur*, at the head of the Val d'Aosta, with mineral springs.

6. *Intendancy of Nizza.*—NIZZA (NICE), an episcopal city, 100 miles S. by W. of Turin, in a delightful situation at the mouth of the Paglione, at the foot of an amphitheatre of hills, which are cultivated like a garden, and covered with country houses, and orange and lemon groves. Nice is the seat of a bishop, and of a judicial senate or tribunal of appeal; and has a theatre, some fine public buildings and baths, a good harbour, upon the Mediterranean, and an extensive trade. It is a great resort for invalids, though the climate seems not very favourable; for in summer the heat is excessive, and, during winter and spring, the proximity of the Alps, and the Vent de bise, render the air frequently cold and even frosty. Nice is connected with Turin by a superb road over the maritime Alps. *Villafranca*, a small seaport town, with a harbour, where the royal galleys are stationed, a fine road, and a school of navigation. *Vintimiglia*, a small fortified town on the coast. *San Remo*, a small town, with a harbour, and considerable trade. *Monaco*, a small town on the coast, east of Nice, is the capital of a sovereign principality, but under the complete controul of the King of Sardinia. No trifling part of the prince's revenues is derived from a tax which he levies on travellers passing through his petty state. The prince resides mostly at Paris.

7. *Intendancy of Genova.*—GENOVA LA SUPERBA (GENES, GENOA), a large, strong, and commercial city, on the east side of a bay of the Gulf of Genoa, which forms a large and capacious harbour, which, though protected from the sea by two large moles or piers projecting from the opposite sides of the entrance, is not very safe, being exposed to the libeccio or south-west wind. The city is built on the slope of a hill, in a delightful situation, but few of the streets are remarkable for elegance, though they contain many large and costly palaces and public buildings. Its numerous churches are all magnificent, though not to be compared in dimensions with some of the other churches of Italy. It possesses a university with 29 professors, a marine school, a navigation school, a deaf and dumb institution, an academy of the fine arts, four public libraries, of which that of the university is the principal, and an arsenal, with building slips for the royal navy. The *Albergo dei poveri* is perhaps the most magnificent poor's-house in Europe. It is sufficiently capacious to lodge 2000 persons, and serves as a refuge for the destitute, a house of correction, and a school, where every person able to work is taught some useful trade. Genoa is the seat of an archbishop, a council of admiralty, and of a judicial senate or tribunal of appeal. Besides the walls of the city, a large extent of ground surrounding the harbour is also inclosed with fortifications; and at the south-western extremity of these, and on the west side of the entrance of the harbour, is the lofty fanal or lighthouse. A part of the enclosure is considered as a free port, and displays a great degree of commercial activity. Including soldiers, sailors, foreigners, and strangers, the city is supposed to contain 113,000 souls; the garrison amounts to 6000 men. Genoa was for a long time the capital of a sovereign state, the rival of Venice in her maritime power and commerce; but her independence was lost during the French invasion of Italy; and, in 1815, the city with the adjoining territory was assigned by the Congress of Vienna to the king of Sardinia. The civic government is now vested in a great town council, which is self-elected, and a little town council, upon the latter of which the ordinary business devolves. The opposite sides of the Gulf have been long known by the names of *Riviera di Levante* and *Riviera di Ponente*, or the eastern and western shores. *Savona*, an episcopal city, with some cloth manufactures, commerce, and a small harbour, south-west of Genoa. *Voltri*, a small town, possesses the largest clothworks in the duchy. *Cugoletto*, a small village, claims the honour of being the birthplace of Columbus, and his house is still shewn. *Chiavari*, a small seaport town, with some trade, and an economical society. *Spezzia*, a small town, in a beautiful situation, at the head of the fine gulf to which it gives its name. *Bobbio*, a small episcopal city, with a celebrated library belonging to a convent, founded in the beginning of the seventh century by St. Columban, from which nearly all the palimpsests decyphered by Mai, Peyron, Neibuhr, and others were obtained. *Oneglia*, a town also on the Riviera de Ponente, only noted for its extensive olive groves.

8. *Intendancy of Savoy.*—Savoy being, as already mentioned, beyond the proper limits of Italy, no part of the preceding description can apply to it. It extends in length about 85 miles, from the lake of Geneva to the French departments of Isere and Hautes Alpes, which form its border on the south; and in breadth, from the crest of the Alps to the banks of the Rhone, below Geneva, between 50 and 60. The country is nowhere level, but on the western side some of the valleys open out to a width of several miles. The greater part of the country consists indeed of high alpine valleys, the lowest of which are more than a thousand feet above the level of the sea, and some of which are so inclosed by mountains as to be almost entirely secluded. These valleys have no other outlet than a deep gorge or chasm, through which the waters have forced a channel, but which was too narrow to admit of an entrance until the labour of man had widened the passage. As the mountains recede from the crest of the Alps, their summits fall below the line of perpetual snow; the fir grows nearly to their highest points, and the intermediate declivities, though too elevated for cultivation, afford summer pasture. A real Swiss climate prevails. Summer in its glorious garb, may often be seen in the valleys, while the surrounding hills have their sides and tops covered with snow. The atmosphere is too ungenial to produce the more delicate fruits of Italy; but in favourable spots grapes ripen, and the sides of the hills yield abundance of chestnuts. But, though changeable, the air is, upon the whole, pure and healthful. The lowest hills and slopes, and the bottoms of the valleys, are the only portions that can be cultivated by the plough or the spade. In the Maurienne and the Tarentaise, two of the most alpine districts, the proportion covered with bare rocks, stones, and glaciers, is equal to one-half of the surface capable of cultivation. The principal rivers of Savoy are, the *Isere*, which drains the valley of Tarentaise, and flows into France, after receiving on the left the *Arc*, from the valley of Maurienne; the *Arve*, which drains the valley of Chamouny, and flows through Faucigny into the Rhone, below Geneva; the *Dranse* which flows into the lake of Geneva, between Thonon and Evian. Besides the lake of Geneva, which forms the northern border, Savoy contains also the *Lake of Annecy*, ten miles in length, and from one to two in breadth, 1350 feet above the level of the sea, and 180 feet deep, drained by the rivers Thon and Fier, affluents of the Rhone; and the *Lake of Bourget*, 10 miles in length, and from 2 to 3 in breadth, and 240 feet deep, drained into the Rhone by the canal of Saviere. There is also a lake on Mout Cenis 5740 feet above the level of the sea. Savoy Proper occupies the lower part of the valley of the Isere; *Genevrino* or *Genevois*, between Geneva and Savoy; *Faucigny* or *Faussigny*, the valley of the Arve; and *Chablais*, the country along the lake of Geneva. The soil of Savoy is everywhere stony, and consequently not favourable to agriculture. Trees grow to the height of 6700 feet above the level of the sea: shrubs to 8500; vines will grow at the height of 2380; the oak at 3518; barley to 4180; the larch to 6000; the pinus cembra to 6600; the rhododendron to 7400; some plants are found on a granitic soil, at 10,600 feet; above which a few

lichens are found, up to 11,000. The Savoyards belong to the French family, and French is the language generally spoken, and, what is remarkable, with greater correctness than by the peasantry of France. The Savoyards have, in general, the character of being honest, industrious, and more civil and sociable than their neighbours, the Swiss; the women bear almost as large a share in the labours of husbandry as the men. The inhabitants of the mountains are wealthier and more industrious than those of the lower valleys, and are mostly proprietors of the ground which they cultivate. Though the peasantry are very poor, yet their condition is not abject or miserable. They are in the practice of migrating annually, at the fall of the leaf, to Piedmont and France, or even to Germany, where they pursue their respective trades, and in the spring return to the labours of husbandry. Many of them are also in the practice of proceeding to distant parts of France, and even to other countries, where they spend several years in the most active or laborious professions, and return at length to their native mountains to enjoy their savings.

Chambery, the capital, is a small archiepiscopal city, situate in a fertile and well cultivated plain, on the great road from Lyon to Mont Cenis. The streets are gloomy and crowded, and none of the public buildings are worthy of notice. It is the seat of the royal academical society of Savoy, which applies itself to agriculture, industry, and trade, and has published some interesting memoirs. The museum and the public library are the principal literary establishments. A railway has been formed between Chambery and Bourget. *Aix les bains*, 10 miles N. of Chambery, a small town in a calcareous district, with nothing to recommend it but its baths, which are supplied by two abundant springs of hot water, and are contained in a large and commodious building. *Haute Combe*, a small place noted for a magnificent abbey founded in 1125, by Amadeus III., Duke of Savoy, where several members of his family have been buried. *Les Echelles*, a remarkable passage on the road from France, where there is a grotto or tunnel 325 yards in length and 25 feet high, commenced by the French, and completed by the present government. *Annecy*, a small and ill-built episcopal city, with 5000 to 6000 inhabitants, numerous manufactories of cotton thread, printed linen, and glass, and iron mines in its vicinity. *Montiers*, a small town with a mineralogical school. *Conflans*, a town with a royal foundry supplied with lead and silver from the mines of *Pesay* and *Marot* in the neighbourhood. *Lesseillon*, a fortress recently erected to defend the frontier on the side of France. *Chamounix* or *Chamouny*, a priory and hamlet, 40 miles S.E. of Geneva, 3463 feet above the level of the sea, situate in a secluded valley 12 miles long and one in width, surrounded by glaciers and lofty mountains, among which rises Mont Blanc, the highest of the Alps. It is from Chamouny that the ascent of Mount Blanc is usually made. *Bourget*, an ancient town at the south-western extremity of the lake to which it gives its name, is now connected with Chambery by a railway.

Island of Sardinia.

This is a large island in the Mediterranean Sea, between 38° 50′ and 41° 20′ north lat., and 8° and 10° east longitude, being 167 miles in its greatest length, and 90 in its greatest breadth, and having an area of 9500 square miles. The interior is occupied by two chains of mountains running north and south, with an elevated valley between them. The eastern chain, the principal part of which is named the *Ginargentu mountains*, is the higher, and rises, in *Monte Schiuschiu*, to 6000, and in the *Lyubarra mountains* to 3768 feet; while the western chain probably nowhere exceeds 3000. The valleys are numerous but very narrow, and are drained by a number of rivers, none of which are navigable. In some places, particularly at Oristano, on the western coast, are low marshy tracts, which are extremely unhealthy. About a third of the surface is covered by forests, a considerable portion of which is oak, and well adapted for ship-building. The predominating formations are primitive and transition, the rocks being granite, mica-slate, clay-slate, and limestone. On the southern and north-western coasts are considerable deposits of tertiary limestone, in connection with which trachyte and volcanic rocks appear. The island contains rich mines of silver, copper, lead, and iron, but a mistaken policy prevents their being wrought to advantage; the working being cramped by the most absurd regulations. Besides the space occupied by lakes, marshes, and torrents, the sandy or stony districts occupy more than a third of the island; an equal extent may be assigned to forests and pastures; the remainder is laid out in corn-fields, vineyards, olive-grounds, and gardens. Grain is cultivated to such an extent as to afford a surplus for exportation; the wines are reckoned equal to those of Spain, and the olives are not inferior to those of Genoa and Provence. The salt-works and the tunny fishery are also important objects; but till lately the island was much neglected, and the people were in a very degraded state. The sojourn, however, of the Royal family in Sardinia, during the period of their expulsion from Italy by the French, made its princes better acquainted with the condition and the wants of its inhabitants; and the reign of the late King Charles Felix was marked by the special care which he bestowed on the affairs of the island. In 1820, an edict of Victor Emmanuel authorized the enclosing of common lands, which extended over the greater part of the island and were nearly useless. This permission has been largely acted upon, and many of the enclosed tracts have become well cultivated estates equal to the best in Piedmont. King Charles Felix directed that in every commune, or parish, there should be a school for the gratuitous instruction of the peasantry in reading, writing, arithmetic, the church catechism, and the elements of agriculture. In 1820, out of the whole number of 392 villages, 300 were already provided with such schools, and in each of the ten districts of the island there are normal schools, attended by upwards of 6600 students. In 1836 feudal jurisdictions were abolished, and the courts of law placed under the direct control of the State. In 1838 all feudal rights were abolished, feudal services were ordered to be converted into money payments, and the land to remain free property or be converted to the use of the Crown. In September 1838, a law was promulgated "to establish a free and unlimited system of property, and to relieve the land from all burdens, bonds, and obligations that may appear to be of an intolerable character;" and in February 1839, a more important law was passed, the object of which is to define the nature of property, and secure a more extensive cultivation of the land. The want of inland communication was severely felt; to remedy which inconvenience, a great carriage road was begun in 1823, and completed in 1829, extending from Cagliari to Oristano on the western coast, and thence, inland by Bonoro and Sassari to Porto Torres on the Gulf of Asinaria, where the mails and Government dispatches are landed and embarked to and from Genoa. The whole length of the road is about 145 miles; about 6000 workmen were at times employed upon it, and the cost to the Government was about £160,000, part of which was defrayed from the King's private purse. The northern division of the road passes through high mountainous tracts, reaching in some places the elevation of 2000 feet above the level of the sea; and besides the nineteen towns or villages which occur along its line, there are houses of refuge in the most solitary places, where the keepers of the road reside. The people of the interior have now become anxious to establish at their own expense cross roads in every direction to communicate with the main line; and the Stamenti, or Parliament of the island, have granted money for the purpose of making other high roads leading from the central one to the eastern and western coasts. The laws also, which were the productions of various epochs, differing in the various districts, and often clashing, have been digested into a new code, all their anomalies and obscurities have been removed, and their deficiencies supplied. The beneficial effects of these measures soon became apparent on the minds of the people,

more particularly in the decrease of crime, most of which originated, as among all uncivilised people, in violence, jealousy, or revenge. This was especially the case in the inland mountain districts of Barbagia and Gallura, while robbery on the roads or in houses was very rare, and in many parts unknown. The population of the island exceeds half a million. The people are brave, high-spirited, and generally hardy and robust, except in the unwholesome plains, as at Oristano, where the malaria fever is very prevalent and destructive. The Government is vested in the King, who is represented by a viceroy, assisted by the Stamenti, or Parliament, which consists of three estates; the first or ecclesiastical, which comprises the bishops, abbots, and chapters; the second, or military, which comprises the nobles; and the third, or royal, formed by the counsellors of the seven cities. But their powers are limited chiefly to the raising of taxes; and every three years a junto of the deputies of the three orders grants to the Government certain contributions or donativi, which the King demands by circular letters. The island is divided into ten provinces, namely, *Cagliari*, *Busachi*, *Iglesias*, *Ivili*, *Lanusei*, *Nuoro*, *Sassari*, *Alghero*, *Cuglieri*, and *Ozieri*. The principal employment of the people is agriculture, and the enclosed lands are generally well cultivated. Grain was formerly the principal article of export, but its value has been greatly reduced by competition with Odessa. The horses are of a good breed, but many of them are wild; and, previously to the late improvements, of the estimated number of 470,000 beeves, no less than 350,000 were wild, and the whole of the sheep, nearly a million in number, were in the same unreclaimed state. The beef is of excellent quality; the mutton is only tolerable; but the pork, especially in winter, is the finest in Europe. There was, however, even then, a considerable exportation of saltmeat and cheese; salt, made by evaporation in the salines of Cagliari, Palmas, and Oristano, and fish, formed also an important part of the exports. (*Foreign Quarterly Review*, XII. *Raumer's Italy*, I.) Besides the coast fisheries, the lakes at Oristano, Cagliari, and Porto Pino, abound with fine mullet, bream, eels, and other fish, which, being carefully fattened, are a staple article of consumption and commerce, and afford considerable profit to the proprietors. There are also coral fisheries, the best of which are on the west and south coasts, where two or three hundred boats arrive annually from Naples and Genoa for the purpose of fishing it, paying only a small duty for anchorage, and an impost of about five per cent. on the produce. The fishery begins in March and ends in October, each boat collecting coral to the value of about £300, at the rate of 6½d. per English pound weight. Around Cagliari are three natural salterns, namely, Molentargius, Spiaggia di Mezzo, and Rollone; two, which are artificial, belonging to Government, the whole capable of producing annually 50,000 tons. The expense of collecting the salt is little more than 6s. a ton; but the King makes the Sardinians pay 20s., and his continental subjects £10 for that quantity. Tobacco is also a royal monopoly, and is grown by licence. Linseed and flax are exported to a considerable amount; silk, cotton, madder, and barilla are produced in small quantity; but are capable of being greatly extended. (*Macgregor's Report*, 70, 1, 2, 3.)

CAGLIARI, the capital, situate on the shore of a deep bay on the south-east coast, is a large, but ill built, ill paved, and crowded town, with 27,000 inhabitants and considerable trade. It is also the see of an archbishop, and possesses a university, which is well attended. *Sassari*, in the north-western corner of the island, is a fine town, with a university, and 18,000 inhabitants. The other principal towns are *Oristano* or *Oristagni*, which has a fine harbour, and flourishes by the tunny fishery and the export of wines produced in the neighbourhood, *Bosa*, and *Alghero*, all on the western coast, each with about 5000 inhabitants; *Iglesias*, *Tempio*, and *Quarto*, in the interior, each with about the same number. The smaller islands around Sardinia are:—*Madalena*, *Santa Maria*, *Caprera*, on the north-east; *Mortorii*, *Tavolara*, *Molara*, *Petrosa*, *Oghastra*, *Chirra*, *Serpentaria*, and *Cavoli*, on the east coast; *Asinara*, *Pelosa*, *Maldiventre*, *Coscia*, *San Pietro*, *San Antioco*, *Vaca*, and *Toro*, on the west coast. Sardinia contains numerous remains of antiquity, the most remarkable of which are the Nurages or Nuraghes, which are conical towers, constructed of large cubic stones without cement. The largest are from fifty to sixty feet in height and ninety in diameter. The interior is divided into three dark chambers, one above another, and communicating by a spiral stair-case. Under several of them burial places and subterraneous passages have been discovered. In some instances an outer wall of the same construction, ten feet high, encloses the terrace on which the Noraghe is built, with a circuit of 130 feet. Of these buildings more than 600 are scattered over the island. (*Foreign Quarterly Review*, XII. 252. *Balbi's Geography*, 3*me. edition*, p. 383.) Sardinia came into the possession of the Duke of Savoy in 1719, with the title of King, by grant from the great powers of Europe, in exchange for Sicily, which he had received as a new kingdom at the peace of Utrecht.

§ 2. *Lombardo-Venetian Kingdom.*

This kingdom consists of the north-eastern part of the great plain of Lombardy, with the country between the northern extremity of the Gulf of Venice and the Alps, and some Swiss valleys; and includes the eastern portion of the ancient Duchy of Milan, the Duchy of Mantua, the Valteline, Chiavenna, and Bormio, which formerly belonged to the Swiss canton of the Grisons; some fractions of Parma and of the States of the Church, lying on the left bank of the Po; and the territory of the late republic of Venice. It now forms an integral part of the Austrian empire, under the government of a viceroy; and is divided, for administrative purposes, into the two governments of *Milan*, or *the Lombard Provinces*; and *Venice*, or *the Venetian Provinces*; each of these being subdivided into delegations, as stated in the following table. In the capital of each delegation is a court of first instance for civil and criminal business; in Milan and Venice are courts of appeal for the two governments, and at Verona a high court of revision is established for the whole kingdom.

I. GOVERNMENT OF MILAN.

Delegations.	*Cities, Towns, &c.*
Milano, . .	MILANO, 160.* Simonetta, Linterno, Rho, Monza, 16. Desio, Lainate, Inverigo, Gallarate, 4. Saronno, Somma, Gorgonzola.
Como, . . .	Como, 16. Torno, Fino, Bellagio, Bellano, Menaggio, Lecco, 2. Colico, Gravedona, Dongo, Varese, Angera, Laveno, Porto, Luino.
Sondrio, .	Sondrio, 4. Tirano, 2. Chiavenna (Cleven, Cleves), 3. Bormio (Worms,) 1.2. San Martino, Morbegno (Morben.)
Pavia, . . .	Pavia, 24. La Certosa, Buffalora, Abbiategrasso, Binasco, Belgiojoso.
Lodi, . .	Lodi, 16. Crema, Codogno, Soncino, San Colombano, 5.
Bergamo, .	Bergamo, 32. Alzano Maggiore, Zogno, 2.5. San Pellegrino, San Salvatore, Gandino, Trescore, Romano, 3. Martinengo, 3. Caravaggio, Treviglio, 6. Clusone, 3. Edolo, Breno, 2. Bieno, 2. Lovere, 4. Pisogne, 3. Malonno.
Brescia, . .	Brescia, 34. Chiari, 8. Lonato, 6. Rovato, 5. Orzi Nuovi, Pentevico, 5. Gardone, 1.4. Desenzano, 3.6. Toscolano, Salo, 4.5. Bagolino, 3.7. Montechiari, 6. Iseo, Idro, Lumezzano, Pieve, 1.3. Gavardo, 1.9. Castenedolo, 4.5. Leno, 4. Travagliato, Verolanuova, 4. Calcinato, 3.

* These figures denote *thousands*; the decimals, *hundreds*.

Cremona, . Cremona, 27. Casal Maggiore, 5. Pizzighettone, 4. Castelleone.
Mantua, . . Mantua, 28. Pietole, Revere, Sabionetta, 6. Bozzolo, Castiglione, 5. Delle Stiviere, Peschiera, 1.5. Viadana, 14. Asola, Ostiglio, Gonzaga, 13.

II. GOVERNMENT OF VENICE.

Venezia, . VENEZIA (VENEDIG, VENISE, VENICE), 103. Murano, 4. Burano, 5. Mazzorbo, Torcello, Altino, Jesolo, Caorle, Concordia, Portogruaro, 2.9. Eraclea, 8. Dona di Piave, Poreglia, Lazzaretto-vecchio, Malamocco, Palestrina, Chioggia, Brondolo, Cavarzere, Loreo, Ariano, Fusina, Malghera, Mestre, La Mira, 2. Dolo, Stra.
Padova, . . Padova (Padua), 51. Abano, 2.6. Montegrotto, Teolo, 2.7. Luvigliano, La Battaglia, 2.7. Cattajo, Arqua, Saonara, Pieve di Sacco, Conselve, Monselice, Ponte di Brenta, Noventa Padovana, Mirano, Sala, Campo San Pietro, Loreggia, Piazzola, Este, Montagnana.
Vicenza, . Vicenza, Costoza, Brendola, Montecchio Maggiore, Camisano, Cittadella, Bassano, Angerano, Marostica, Nove, Asiago, Schio, Magre, Tretto, Valle, Velo, Tiene, Malo, Valdugno, Reccoaro, Arzignano, Lonigo, Montebello, Barbarano.
Verona, . . Verona, 47. Bussolengo, Azzano, Villafranca, Vallegio, Isola della Scala, Zevio, 8. Bonifacio, Arcole, Soave, Caldiero, Illasi, Badia Calavena, Vestena, Ponte di Veja, Monte Bolca, Lazise, Rivoli, La Chiusa, Cerea, Legnago, Cologna, Caprino, Incafi, Bardolino.
Rovigo, . . Rovigo, 9. Adria, Lendinara, La Fratta, Badia, Canda, Occhiobello, Crespino.
Treviso, . Treviso, La Follina, Oderzo, La Motta, Porto Buffole, Conegliano, Ceneda, Serravalle, (Polesina.) Tarzo, Monte Belluna, Lovadina, Asolo, Maser, Crespano, Possagno, Valdobbiadene, Castelfranco.
Belluno, . Belluno, 11. Capo di Ponte, Longarone, Perarolo, Cadore, Auronzo, Agordo, Alleghe, Fonzaso, Feltre, Mel, Sedico.
Udino, . . . Udino, 20. Campo Formido, San Daniele, Spilembergo, Maniago, Aviano, Polcenigo, Sacile, Caneva, Pordenone, Cordovado, Codroipo, Passeriano, San Vito del Tagliamento, Latisana, Palma-nova, Marano, Cividale, Moggia di Sotto, Ponteba, Ampezzo, Tolmezzo, Cercivento, Gemona, Osopo, Venzone.

MILAN (MEYLAND, MILAN), the capital of Lombardy, is situate on the river Olono in the centre of a large plain, noted for its beauty and richness. Milan has no fine squares, and many of the streets are narrow and crooked; it contains, however, some wide and spacious streets, which, with the great number of elegant houses and palaces, and its public buildings remarkable for their massiveness and their architecture, entitle it to rank among the finest cities of Italy. It is intersected by three navigable canals, one of which extends to Pavia; its climate during winter is damp and cold, in summer it is oppressively hot, and in autumn and spring, often damp and unwholesome. The city is surrounded by broad ramparts, planted with large trees, which afford ever-varying prospects. The population amounts to about 160,000. The principal object of attraction is the Duomo or Cathedral, a very large building of mixed gothic, built of white marble, and profusely adorned with pinnacles and statues. It was commenced in 1385 by John Galeazo, first Duke of Milan, but remained unfinished till the reign of Napoleon, who ordered it to be completed, and both he and his successors, the Emperors of Austria, have devoted large sums to this purpose. It measures in length 486 feet, in breadth, 288, and to the top of the cupola, 258; but it has neither domes nor towers to relieve its massiveness. In a fine subterranean chapel, which is sumptuously adorned, rests the body of San Carlo Borromeo, in a crystal sarcophagus, ornamented with silver gilding. The church of St. Ambrose, the oldest in Milan, is an assemblage of several styles of architecture, from the days of the Emperor Theodosius, who did penance before its gates. Among the other public buildings may be mentioned, the royal and archiepiscopal palaces, the theatre della Scala, one of the largest in Europe; the lazzaretto and great hospital, the latter of which contains 2200 beds; the mint, the royal palace of the arts and sciences, the observatory, the public library, the botanic garden, the academy of the fine arts, and the magnificent triumphal arch which serves as the terminus of the road of the Simplon. Milan contains, besides these, a number of other scientific and literary establishments; is the residence of the Viceroy of Lombardy, and the see of an archbishop; and from its favourable situation, which places it in communication with the great roads of the Simplon, St. Gothard, the Splugen, the Stelvio, and the canals of the Adda and the Ticino, has become the general entrepot of the trade of northern Italy. Its commerce embraces not only the agricultural produce, but also the productions of the numerous manufactories of printed calicoes, ribbons, veils, velvets, and handkerchiefs; goldsmith work, gilt bronze ornaments, artificial flowers, embroideries, and lace. It has also of late acquired considerable importance even in matters of exchange, and its printing and bookselling business is the most important in Italy, the only rivals being Venice, Turin, and Florence. At *Monza*, on the Lambro, three leagues north of Milan, Charlemagne was crowned King of Lombardy with the iron crown of the Lombard kings, which is still preserved along with several other royal relics in the cathedral. Monza contains about 16,000 inhabitants, a fine palace of the Viceroy, and a very rich botanic garden.

Como, a fine episcopal city, at the south-western extremity of the cognominal lake, with flourishing manufactures of cloth, silk stuffs, physical and optical instruments, a large cathedral, one of the finest in upper Italy, and 16,000 inhabitants. In its immediate vicinity is the *Villa Odescalchi*, so large and magnificent, as to be fit for a royal residence. *Lecco*, on the eastern branch of the lake, at its southern extremity, is a small town with 2000 inhabitants, an iron foundry, and considerable trade. *Dongo* a busy commercial town, with 3000 inhabitants, many of whom are employed in the manufacture of physical and musical-instruments, which are carried to every country.

Sondrio, on the Adda, a very small town, with 3000 inhabitants, in the Valteline. *Bormio* (German, *Worms*), with 1600 inhabitants, in an elevated position, is only noted for the baths of St. Martin in its vicinity, and for its connection with the great military road over Monte Stelvio, or the Stilfersjoch, which commences at these baths, and reaches the elevation of 2814 metres (9232 feet) above the level of the sea. *Chiavenna* (German, *Cleven*, French, *Clevez*), upon the Maira, a small town, with 3000 inhabitants, who carry on a considerable traffic along the three great roads with which it is connected; that which leads by the lake of Lecco to Milan, that of the Engadine, which leads to St. Moritz, and that of the Splugen.

Pavia, an episcopal city of moderate extent, near the left bank of the Ticino, is more remarkable for its antiquity and its historical celebrity as the capital of the Lombard kings, than for its present importance. It possesses a celebrated university, with three colleges, a botanic garden, and several other scientific and literary establishments. Population about 24,000. Four miles from Pavia is the monastery of the *Certosa*, suppressed by the Emperor Joseph, considered to be the most tasteful and most richly adorned building in Italy. Including its church and other buildings, it occupies sufficient space for a large village. Its church is encrusted with precious marbles, and an annual allowance is made by the government for keeping it in repair.

Lodi, an episcopal city on the right bank of the Adda, over which there is an ancient bridge, memorable for "the terrible passage" effected by Buonaparte in 1796. The citizens manufacture

a large quantity of pottery, are engaged in the spinning of silk, and carry on a great trade in Parmesan cheese, which is all made in the adjoining district.—Population 16,000.

Bergamo, a large town with 32,000 inhabitants, occupying a singular situation, partly on a scarped height, and partly round it, has a flourishing trade and numerous manufactories of silk. During the last eight days of August and the first days of September a great fair is annually held here, at which business to a great amount is transacted. The place in which the fair is held is a building of hewn stone, containing more than 600 shops, symmetrically disposed round a large area, in the centre of which is a fountain.

Brescia, an episcopal and commercial city, situate in the middle of a fertile and finely cultivated plain, 50 miles east of Milan, with 34,000 inhabitants, who are chiefly employed in cutlery and the manufacture of arms and silk. At the southern end of the lake of Garda, near *Desenzano*, is the fort and peninsula of *Sermione*, where the ruins of the villa of the poet Catullus are said to be still seen.

Cremona, a large and fine episcopal city on the left bank of the Po, 50 miles S.E. of Milan, is chiefly remarkable for the manufacture of fiddles and fiddle-strings. Its duomo or cathedral is one of the largest and most interesting Gothic churches in Italy, with a very high tower, and a zodiac sculptured on its façade. *Pizzighettone*, on the Adda, is only noted for its fortifications, which, of late, have been very considerably augmented.

Mantua, a large and fine episcopal city, is situate in the middle of a lake formed by the Mincio, and connected with the mainland by causeways. Its extensive fortifications and its situation in the lake, entitle it to rank among the principal fortresses in Europe. The atmosphere, however, is unwholesome.—Population 28,000. In the vicinity are, the magnificent Gothic church of *Santa Maria delle Grazie*, on the lake, almost entirely covered with votive tablets, and visited annually by so many as from 80,000 to 100,000 pilgrims; *Pietole*, a fort on the right bank of the Mincio, constructed to maintain the inundation which surrounds Mantua, and makes it inaccessible except at four points, defended by formidable batteries, viz. St. George's Bridge, the Citadel, the Pradella Gate, and the Port of Pietole, which is supposed to occupy the site of *Andes*, the birth-place of Virgil; *Peschiera*, a fortress on the Mincio, at the outlet of the Lake of Garda.

VENEZIA (VENEDIG, VENISE, VENICE), an ancient city, in a most singular situation, being built upon a cluster of islands in the midst of a salt lagune, or shallow lake, separated from the sea by a long strip of firm sand, through which there are several openings for the tide, which alternately covers and lays bare a considerable portion of the bottom of the lagune. Venice is considered as one of the finest cities in Europe, though its streets are very narrow, and in most cases only wide enough for foot passengers. But its chief thoroughfares are the canals, which intersect it in every direction, the principal of which is the great canal, 300 feet wide, extending in a long curve line through the centre of the city, and crossed near the middle of its course by the *Ponte di Rialto*, a fine marble structure of one spacious arch. In the midst of this labyrinth of streets and canals are several large piazzas or open areas, almost every one of which is adorned with a fine church or palace. The principal of these is the Piazza di San Marco, a large oblong area 562 feet by 232, surrounded by elegant buildings, and containing at its eastern extremity the metropolitan church of San Marco, a singular but splendid combination of the Gothic and the oriental styles of architecture. The piazza also contains a lofty square tower, 316 feet high and 42 feet square, with a pyramidal top, to which the ascent is made by an easy inclined plane instead of a stair. Adjoining the church is the ancient Palace of the Doge, the prisons, and other public offices of the late republic of Venice. The arsenal is likewise a very spacious structure, placed on an island three miles in circumference, and strongly fortified; it is now the head-quarters of the Austrian imperial navy, and communicates with the Adriatic by a deep channel cut through the lagune. Venice is seven miles in circumference, and situate about four miles from Fusina, the principal landing place on the mainland; and is amply supplied with all necessaries, and even luxuries, though it possesses naturally neither soil nor fresh water. A railway to connect it with Milan is now in rapid progress. Great difficulty was found in carrying it across the lagune; but this has been overcome, and the work, when finished, will probably tend in some degree to restore the prosperity of Venice, which has rapidly declined since the downfall of the republic in 1797. In 1830 Venice was declared a free port, and a decided increase has since taken place in its maritime trade; but the magnificent expectations which that act excited have not been realized, though the progress of decay seems to have been arrested, and improvement is slowly advancing. The population is about 103,000, without including the garrison, which is inconsiderable. Venice is the residence of a Catholic patriarch, an Armenian bishop, and a Greek bishop; and the Viceroy of Lombardy usually spends a part of the winter here. In the neighbourhood of Venice are, *San Michieli di Murano*, a pretty islet, with a fine marble church, and the convent of the Camaldules, to which it belongs; *Murano*, a small town, with glass works, which for several centuries were in great repute, though their productions are now inferior to those of France, England, and Bohemia; *San Andrea di Lido*, a small islet, with a fort, which defends the harbour of Lido, now accessible only by small vessels; *San Lazzaro degli Armeni*, an island, inhabited by Armenian monks, who devote themselves to the education of their countrymen, and have published several useful works in their national tongue; they also publish a weekly journal, which is circulated throughout the East. *Malamocco*, a small town on the west side of the *Lido*, or bank which defends Venice from the sea. Its harbour, defended by two forts, has been much improved by a great bulwark or dike, which, when completed, will be 1400 metres (4593 feet) long, and will have cost £60,000. Malamocco has only about 800 inhabitants, most of whom are employed as pilots. *Palestrina*, a town to the south of Venice, on a long narrow island, named the Litorale di Palestrina, with 7000 inhabitants, who are employed in navigation, fishing, and cultivating gardens, which supply Venice and other places with fruit and vegetables. It was along the outside of this Litorale that, during last century, the Venetians constructed, at great expense, the magnificent bulwark called the Murazzi, to protect their city from the sea. *Chiaggia*, an episcopal city on an island of the lagune, connected by a long stone bridge with the Litorale di Sotto Marina. Gardening, navigation, fishing, the making of salt, and ship-building, form the principal occupation of its inhabitants, who amount to 24,000, including those of the suburbs. Two forts defend the entrance of the harbour. *Brondolo*, a miserable place with a harbour, where formerly the Adige, and now the Brenta and the Bacchiglione enter the sea. The entrance is defended by batteries; but the atmosphere of the town is so unwholesome as to have become proverbial. *Cavarzere*, a large commercial town with 7000 inhabitants, divided by the Adige. *Eraclea*, on a peninsula formed by the confluence of the Livenza and the Piave, was formerly a flourishing town, the capital of the republic, but is now completely destroyed, and almost obliterated. Here the first Doge, or Duke of Venice, was elected in 697, and the town continued the capital till 742, when the ducal residence was transferred to Malamocco. To the west of Venice is *Malghera*, a miserable place, where extensive fortifications have been erected for the military defence of the city. *Mestre*, *Fusina*, *La Mira*, and *Dolo*, considerable towns or villages on the mainland, at the terminations of the several roads and canals by which Venice communicates with the interior of Lombardy.

Padova (Padua), a large and busy commercial and episcopal city, between the Brenta and the Bacchiglione, 22 miles W. by S. of Venice. Its university has been long celebrated as one of the first in Europe, and was restored and augmented by the late Emperor Francis, who added several chairs which were wanting to complete the curriculum. There are, besides, in the city many other

scientific and literary institutions. Population above 31,000. In the neighbourhood are, *Abano*, a village frequented for its sulphureous baths; *Teolo*, a town in the Euganean hills, said to be the birth-place of Livy; and near it *Luriglano*, a summer palace of the bishop of Padua; *La Battaglia*, visited annually by great numbers of people on account of its sulphureous baths, and the amenity of its climate; and *Arqua*, a village on one of the Euganean hills, which contains the tomb of Petrarcha, and the house in which he died. *Este*, 13 miles S. by W. of Padua, one of the most ancient cities of Italy, with a population of 9000, was, during the middle ages, the residence of the Marquis of Este, one of the principal potentates of Italy, and the stock from which the Dukes of Modena and Brunswick, and the present royal family of Great Britain, are sprung.

Vicenza, on the Bacchiglione, 37 miles W. of Venice, a fine episcopal and commercial city, with 31,000 inhabitants. It was the residence of the architect Palladio, and is still adorned with several buildings erected by him. Vicenza is advantageously distinguished for the varied industry of its citizens, who are largely engaged in the manufacture of silks, of which an immense quantity is produced in its fertile and highly cultivated district. *Bassano*, 23 miles N. by W. of Vicenza, a fine town upon the Brenta, with 10,000 inhabitants, distinguished for their industry and trade. *Ariago*, a large town with 5000 inhabitants, is the chief place of a mountain district known by the name of the seven communes, whose inhabitants speak a dialect of German. The origin of its inhabitants has long been an object of antiquarian research.

Verona, on the Adige, a large commercial and episcopal city, adorned with many fine ancient and modern buildings, among which may be mentioned a Roman amphitheatre, still very perfect. Placed near the gorges of the Tyrol, and the defile of the Adige, and commanding that river by its four stone bridges; and situate between the gorges of the *Chiusa* and the heights of *Caldiero*, and supported by the fortresses of Mantua, Peschiera, and Legnago. Verona has always been a most important military position; its fortifications have been lately much enlarged. It is also noted for its fine dyeing, and carries on a great trade in silk thread both for sewing and weaving, which is spun by a great number of water mills. Population 47,000. *Arcole*, on the Alpon, in the midst of marshes, S.E. of Verona, is distinguished in history for the victory gained there by Buonaparte, over the Austrians, in 1797. *Legnago*, a well built commercial fortified town on the Adige, with 10,000 inhabitants. In its neighbourhood, between the Adige and the Tartaro, is the unhealthy canton of *Valli Veronese*, which produces an immense quantity of excellent rice. Near *Incaffi*, at the foot of Mount Baldo, is the sanctuary of *La Madonna de la Corona*, which occupies a remarkable position in a cleft of the mountain, to which the only access is by a stair of 234 steps cut in the rock; while the descent is effected by ropes 420 feet long.

Rovigo, on the Adige, a small commercial town, with 9000 inhabitants, formerly the capital of the Polesina, and now the ordinary residence of the bishop of *Adria*, a very ancient Etruscan city, which had a flourishing trade both by land and sea, during the best periods of Roman history. Its harbour and the adjacent sea have been so much filled up by the earth and mud brought down by the Adige and the Po, that it is now 20 miles distant from the coast. By the opening, however, of the canal of Porto-vico, its climate, which had been long deleterious, has been considerably ameliorated, and its territory, drained from pestilent water, is now covered with beautiful and fertile fields. It is an episcopal city, contains several remains of Etruscan and Roman antiquities, and has 10,000 inhabitants.

Treviso, upon the Sile, an episcopal city, with numerous manufactures of linen and paper, a flourishing trade, and 19,000 inhabitants. *Possagno*, a large village with 1200 inhabitants, has acquired great celebrity as the birth-place of the sculptor Canova, and for a fine temple, erected by him, in which he has united the dome of the Pantheon to the peristyle of the Parthenon.

Belluno, a small city, near the Piave, with considerable manufactures, and 11,000 inhabitants. In the vicinity, at *Capo di Ponte*, is a fine bridge, with one arch of 160 feet span. *Cadore*, near the Piave, a village with 500 inhabitants, has considerable trade, and is noted as the birth-place of Titian. *Auronzo*, a small town, with mines of oxide of zinc, or calamine, of excellent quality and of extraordinary richness. The firs of the forest of Auronzo are of an unusually large size, and supply the arsenal of Venice with masts for ships of the largest class. *Agordo*, near Cordevole, possesses copper mines, which are considered to be the richest in Italy. *Alleghe*, a village with 700 inhabitants, is noted for its forges and a great manufacture of ironmongery.

Udino, formerly the capital of the province of Friuli, a well-built episcopal city, with several literary and scientific establishments, and some manufactures of linen, silk thread, &c. Population 20,000. In its vicinity is *Campo-Formido* (or *Campo Formio*), a village with 600 inhabitants, noted for the treaty of peace concluded there between France and Austria, in 1797. *Tolmezzo*, a small town with 1200 inhabitants, the chief place of Carnia, which formerly enjoyed great privileges, was governed by its own laws, and was recently the centre of a great linen trade. It is supposed that more rain falls here than in almost any other place in Europe.

§ 3. *Duchy of Parma.*

This small State is situate in Lombardy, to the south of the Po, and extends from that river southwards to the crest of the Apennines, between the Sardinian States on the west and the Duchy of Modena on the east. It consists of the ancient duchies of Parma, Placentia, and Guastalla, with the exception of those portions of them situate to the north of the Po, and was formed into a sovereign duchy in 1815 in favour of the Archduchess Maria Louisa, late Empress of the French. Guastalla is separated from the main body of the state by an intervening portion of the duchy of Modena. PARMA, the capital, is a large and handsome city, on the Parma, with about 30,000 inhabitants, is a bishop's see. The dome of the cathedral is painted in fresco by Corregio; the finest church in the city is that of La Madonna della Steccato. There are several scientific and literary institutions, the principal of which are the university, the school of arts, the college of nobles, and the ducal library. *Piacenza (Placentia)*, near the right bank of the Po, is a large well-built episcopal city, with a ducal palace, a cathedral, several other fine edifices, and a citadel occupied by Austrian troops. Population 28,000. *Borgo San Donino*, a small episcopal city, with 5000 inhabitants. *Guastalla*, a small episcopal fortified city, with 6000 inhabitants, near the right bank of the Po, N.E. of Parma. *Fiorenzuola*, a small place noted of late years for the discovery in its vicinity of the ruins of the ancient *Velleia*, which seems to have been suddenly destroyed by a volcanic eruption, or by the fall of a mountain soon after the period of Constantine the Great. It was among these ruins that the famous Trajan table, one of the most important relics of ancient Rome, was found.

§ 4. *Duchy of Modena.*

The Duchy of Modena is situate to the eastward of Parma, and extends from the south bank of the Po to the crest of the Apennines; beyond which, the Duke also possesses the Duchy of Massa and Carrara, which reaches to the Tuscan Sea. The present sovereign is an Archduke of Austria, who acquired the duchy in right of his mother, the Duchess Maria-Beatrice d'Esté, the heiress of the ancient family of the Dukes of Modena. *Modena*, the capital, is a fine episcopal city, between the Secchia and the Panaro, with 27,000 inhabitants. The ducal palace is an elegant and majestic edifice, and

is richly furnished; the cathedral is remarkable for its tower called the Guirlandina, one of the highest in Italy, and for the wooden bucket, still preserved, which was the subject of the famous heroi-comic poem of La Secchia rapita. Modena also possesses a university, a college of nobles, a military academy of nobles, an academy or royal school of the fine arts, a royal academy of sciences, letters, and arts, a royal academy of philharmonics, and a public library. The citadel has been converted into a correctional workhouse, where manufactures of coarse cloth, linen, and ropes have been established. The other important places in the State are:—*Reggio*, 15 miles W. of Modena, an episcopal city, with 18,000 inhabitants; *Massa*, 60 miles S W. of Modena, a small episcopal city, with 7000 inhabitants; *Carrara*, a small place, noted for its quarries of statuary marble; *Mirandola*, 15 miles N. of Modena, a busy fortified town, with 6000 inhabitants; *Finale*, with 6000; *Carpi*, a bishop's see, with 5000; *Castelnuovo*, with 3000; *Sassuolo*, *Rubiera*, *Novallora*, *Canossa*, and *Correggio*, the last of which was the birth-place of the celebrated painter Allegri of Correggio.

§ 5. *Grand-duchy of Toscana (Tuscany.)*

This large territory is situate on the west coast of Middle Italy, almost entirely to the west of the crest of the Apennines; and is bounded on the north by Parma, Modena, Lucca, and Romagna, and on the east and south, by the States of the Church. The sovereign is an Austrian archduke, the cousin of the present Emperor, and the descendant of the second son of the late Emperor Leopold II., who, during the reign of his brother Joseph II., was himself for sometime Grand-duke of Tuscany, and first introduced that excellent system of policy for which the Tuscan government is so distinguished. The territory contains altogether 5,224,974 English acres of taxable land, which are thus occupied: in the cultivation of the vine, 568,974; vine and olive, 389,000; arable, 839,000; wood of all kinds, 1,398,000; chestnuts, 304,000; natural and artificial meadows, 66,000; pastures, 1,574,000; various smaller products, 62,000; buildings, 24,000; upon which the government levies a nett annual revenue of about 3,150,000 lire (£103,162 sterling.) The population amounted, in 1815, to 1,169,000; in 1825, to 1,256,000; and in 1838, to about 1,500,000, with an army of from 7000 to 8000, who are levied by a sort of conscription, and serve six years. In 1835, the number of the secular clergy was 8901; of monks, 2461; of nuns, 3939; of monasteries, 133; and of convents, 69. Education has hitherto been very much neglected; and schools and seminaries for the higher branches appear to be very scanty in comparison with the number and revenues of the clergy, and especially of the monks. The country possesses two universities, which are not of great repute; on an average of late years, that of Pisa had from five to six hundred students, that of Siena from two to three hundred; the faculty of law having the largest number, the faculty of divinity the smallest. In 1828, the total revenue of the State amounted to 25,186,000 lire (£824,799 sterling), of which sum the land-tax produced 3,032,000 lire: the customs and commercial duties, 8,401,000; salt, 3,725,000; lottery, 2,309,000; tobacco, 1,577,000. Though a public debt exists, there is no entry of it in the published accounts; nor does it ever appear in the market or at the exchange, a proof that the amount is small, and the security unquestioned. The improvements in the Maremme have occasioned much extraordinary expenditure, which will probably be amply repaid.—(*Italien, von F. von Raumer; Leipzig*, 1840, II. 73, &c.) The territory is divided into five *compartimenti*, which are subdivided into *territori-comunitativi*. The following table contains the names of the compartimenti and their principal towns.

Compartimenti.	*Cities, Towns, &c.*
Firenze, . .	FIRENZE (FLORENCE), Signa, Prato, Pistoja, Pescia, Colle, Volterra, Empoli, San Miniato, Scarperia, Modigliana.
Arezzo, . . .	*Arezzo*, Anghiari, Castiglion Fiorentino, Cortona, Borgo San Sepolcro, Monte Pulciano, Chiusi.
Siena, . . .	*Siena*, Colle, San Geminiano, Montalcino, Poggibonsi, Radicofani.
Grossetto, .	*Grossetto*, Massa, Pitigliano, Orbitello; the islet *Giglio*.
Pisa, ...	*Pisa*, Livorno (Leghorn), Piombino, Pietra Santa, Seravezza, Barga, Fivizzano, Bagnone, Pontremoli, Porto Ferrajo, Porto Longone, and Rio, in Elba.

FLORENCE (FIRENZE LA BELLA), the capital of the grand-duchy, situate on the Arno, in a delightful valley, is considered as one of the finest cities in the world, notwithstanding the narrowness of some of its streets, the irregularity of some of the buildings, and the style of several of its palaces, whose construction resembles that of the fortresses of the middle ages. It contains several palaces, built in a massive rather than an elegant style, as that of Pitti, the ordinary residence of the grand-duke, and the old palace on the banks of the Arno, near which is the celebrated gallery of Florence, "where stands the statue that enchants the world," and many other precious productions of the fine arts. It contains also many churches, most of which are mean and poor, when compared with those of Rome. The principal church is the *Duomo*, or cathedral of Santa Maria del Fiore, remarkable for its extent, its magnificent tower, the richness of the marbles with which it is constructed, and its dome, rivaling in grandeur that of St. Peter's at Rome, for which it served as the model. The church of San Lorenzo is celebrated for its two sacristies, and the chapel of the Medici usually styled "the wonder of Tuscany." The church of Santa Croce is the pantheon of Tuscany, and contains the tombs of Michael Angelo, Dante, Machiavelli, Galileo, Leonardo-Bruni-Aretino, Alfieri, Viviani, and other great men. Florence likewise possesses several important scientific and literary establishments; the Scuole Pie, to which is annexed the observatory; the imperial and royal school of the fine arts; the academy of the georgifili, or royal and imperial economical society; the academy della Crusca; the Italian atheneum, and Colombarian society; the Magliabechian library, the library of the Grand-duke; the Laurentian library, or library of the Medici, rich in valuable manuscripts; the museum of natural history; and the gallery or Florentine museum, which may be considered as the finest existing collection of antiquities and specimens of the fine arts. The Arno flows through the centre of the city, within which it is crossed by four bridges. The climate is cold during winter, very hot in summer, but delightful in autumn and spring. Population, in 1836, 97,548. In the neighbourhood of the city are many country houses and villas, among which are, the royal farms or *Cascini*, to which the public are admitted at all times; the *Carregi de Medici*, the favourite retreat of Lorenzo el Magnifico; *Poggio Imperiale*, and *Pratolino*, two grand-ducal villas: *Fiesolé*, a picturesque village, on the top of a hill, on the site of *Fæsulæ*, an ancient and strong Etruscan city, portions of the massy walls of which still remain. *Vallombrosa*, 14 miles from Fiesole, is also worthy of notice, on account of the beauty of the country and its noble Certosa or Chartreux, which still contains some fine paintings. *Prato*, 12 miles N.W. of Florence, a busy episcopal city, with 10,000 inhabitants, a fine cathedral, and an academia petrarchesca. *Pistoja*, 22 miles N.W. of Florence, a large town, with 12,000 inhabitants, who are employed in making organs, manufacturing cloth, arms, and ironmongery. *Pescia*, a small town, 32 miles W. by N. of Florence, is noted for its paper works and silk trade. *Volterra*, 30 miles S.W., a place of great antiquity, noted for its Cyclopean walls; its citadel, now converted into a prison; its museum of Tuscan antiquities; its salt springs, which supply a great quantity of salt; and its quarries of alabaster, the finest in Europe. *Signa*, a large village on the banks of the Arno, may be considered as the centre of the straw-hat manufacture, which is carried on to a prodigious extent.

Arezzo, 33 miles S.E. of Florence, a town with 9000 industrious inhabitants, some fine buildings, and the remains of an amphitheatre, is the native place of Petrarcha. Guido d' Arezzo, and Redi, whose houses are still shewn. *Cortona*, 12 miles S. E. of Arezzo, a small town of 3500 inhabitants, noted for the great hydraulic operations, which have changed its marshy and pestilential deserts into wholesome, fertile, and well-peopled fields; its collections of Etruscan antiquities, and its Etruscan academy. It also contains some remnants of ancient Cyclopean walls. *Chiusi*, 30 miles S. of Arezzo, in an unhealthy situation, with only 3500 inhabitants, contains numerous collections of Etruscan antiquities. *Monte Pulciano*, 10 miles N.W. of Chiusi, is noted for its excellent wine.

Siena, 33 miles S. of Florence, a large and fine archiepiscopal city, situate on three hills, in a healthy and delightful situation. It contains several fine buildings, among which, the most remarkable is the cathedral, a gothic structure, highly ornamented, and forming a historic gallery of the fine arts, from their revival in the thirteenth century to their perfection in the fifteenth. It contains a university, an academy of sciences, the only one in Tuscany, a college of nobles, a school of the fine arts, and a public library. Population 18,000. *Radicofani*, a small fortress and post-house, on the road to Rome, in a wild and desolate region, 2475 feet above the level of the sea.

Grosseto, a small town in the Maremme, 45 miles S.S.W. of Siena, noted for the great hydraulic works in its neighbourhood for draining the marshes and improving the country. Its salines produce a large quantity of salt. *Orbitello*, a very small place, celebrated among antiquaries for the necropolis of an Etruscan city, which has been discovered there, and is supposed to be that of *Sudrcum*.

Pisa, an ancient but decayed and now desolate city, the capital of a sovereign republic in the middle ages, the great rival of Genoa, is situate on the right bank of the Arno, near its mouth. Several fine buildings still bear witness to its ancient splendour, among which are the cathedral, one of the largest and finest churches in Italy, and the Campanile-torto, a tower 188 feet high, of a cylindrical form, composed of seven ranges of columns, and diverging fifteen feet from the perpendicular. It is constructed with great solidity, and is already 700 years old. The Campo Santo, or burying-ground, is also remarkable for its architecture, its fine paintings, and its ancient monuments. It is covered with earth brought from the Holy Land. Pisa possesses the first university in Tuscany, with four colleges, a rich library, a museum of natural history, an observatory, and a botanic garden. Population about 20,000. The baths of *San Giuliano*, in the vicinity, attract a great number of strangers to the city; and in the neighbourhood is the *Certosa* of Pisa, remarkable for its beauty. *Serarezza*, near Pisa, has quarries of fine statuary marble, which is becoming daily of more importance, since Carrara seems incapable of supplying the quantity that is now required. *Pontremoli*, a small town in a valley of the Apennines, 60 miles N.N.W. of Pisa.

Livorno (Livourne, Leghorn), a fine modern episcopal city, situate on the shore of the Mediterranean opposite the island *Meloria*, is one of the principal commercial towns in Europe, an advantage which it owes to its being a free port, where the productions of all countries can be landed and re-exported without restriction. One of its quarters is named New Venice, from its being intersected by a number of canals, by means of which goods are brought to the doors of the warehouses. The harbour is entirely artificial, and is formed and defended by a great mole or bulwark, and by strong military works; and outside is the road formed by sandbanks surrounding Meloria, on which the lighthouse is built. There are also building slips, on which large ships of 60 guns have been constructed. The city is two miles in circuit, and contained, in 1836, 76,397 inhabitants, of whom upwards of 20,000 are Jews, who have a synagogue, considered to be the largest and finest in Europe, after that of Amsterdam. The great square is spacious, and the Duomo or Cathedral is a noble building. Leghorn, in the fifteenth century, was only an inconsiderable port; and it was not till the middle of the seventeenth century that the liberality of its institutions towards Jews and other strangers laid the foundation of its modern prosperity, and accomplished the transfer from Pisa of the principal trading establishments. In 1645, the civic revenue was 6280 crowns, the number of inhabited houses 700, and of the population between eight and nine thousand. In 1791 the population amounted to 50,790; in 1807, to 64,095; in 1829, to 72,190; and in 1836, to 76,397. With the exception of the period of French domination the trade has been in a state of continual advancement. In 1757, its value amounted to about £106,660 sterling; in 1834, it had reached £1,733,330. *(Bowring's Report, &c.)*

Duchy of Lucca.

The Duchy of Lucca is a small maritime district between Modena and Tuscany, formed into a separate state in 1815 out of the territory of the late republic of Lucca. The duke is to succeed to the duchy of Parma on the death of the Archduchess Maria Louisa, on which event, Lucca is to be annexed to the grand-duchy of Tuscany. The only remarkable places are:—*Lucca*, the capital, an archiepiscopal city, on the Serchio, in the centre of a plain which is cultivated like a garden, with 22,000 inhabitants. The fortifications have been converted into fine walks, and a magnificent aqueduct is constructing to supply the city with water. Lucca has a university, newly established, with the title of Lyceum, a botanic garden, a public library, and the Lucchese academy of sciences, letters, and arts, which regularly publishes memoirs. The environs abound with elegant villas. *Viareggio* is a small seaport town, with a considerable coasting trade, and a population of 5000. *Camaiore*, on the sea coast; *Borgo-a-mazzano*, on the Serchio; and *Ceraiana*, on the Lima. In the vicinity of Corsena are situate the *Baths of Lucca*, which are much frequented both by natives and strangers.

§ 6. *States of the Church.*

The States of the Church occupy the greater part of Middle Italy, extending along the Adriatic Sea, from the Po to the northern frontier of the kingdom of Naples, and being bounded on the west by the Duchies of Modena and Tuscany, and on the south by the Mediterranean Sea. The length from north to south is about 260 miles, the breadth is very various. Since 1832, the dominions of the Pope have been divided into twenty-one provinces, of which the province of Rome is styled a *Comarca*; that of Loreto, a *Commissariato*; those of Bologna, Ferrara, Ravenna, Forli, Urbino and Pesaro, and Velletri, *Legazioni*, because they are governed by legates. The delegation of Benevento, and the territory of Ponte Corvo, are entirely separated from the rest of the dominions, being situate in the northern part of the kingdom of Naples. Ponte Corvo forms part of the legazion of Frosinone. The names of the provinces, and of their principal cities and towns are stated in the following table.

Provinces.	*Cities and Towns.*
Roma. . . .	Roma, Tivoli, Albano, Castel Gandolfo, Frascati, Subiaco, Palestrina, Ostia.
Velletri. . . .	Velletri, Terracina, Sezze, Cori.
Frosinone. . .	Frosinone, Alatri, Ponte Corvo, Veroli, Anagni.
Benevento. . .	Benevento, San Lucio.
Civita Vecchia.	Civita Vecchia, Tolfa, Corneto, Allumiere.
Viterbo. . . .	Viterbo, Montefiascone, Ronciglione, Civita Castellana, Nepi.
Orvieto. . . .	Orvieto, Aquapendente, Bagnarea.

Provinces.	*Cities and Towns.*
Rieti.	Rieti, Poggio Mirteto, Magliano.
Spoleto. . . .	Spoleto, Narni, Terni, Amelia, Norcia, Pie di Luco.
Perugia. . . .	Perugia, Foligno, Nocera, Assisi, Citta di Castello, Citta della Pieve, Todi, Gubbio.
Camerino. . . .	Camerino.
Macerata. . . .	Macerata, Fabriano, Recanati.
Fermo.	Fermo, Porto di Fermo.
Ascoli.	Ascoli, Montalto, Ripatransone.
Loreto.	Loreto.
Ancona.	Ancona, Iesi, Osimo.
Urbino e Pesaro.	Urbino, Pesaro, Fano, Fosombrone, Cagli, Gubbio, Sinigaglia (Senigalia), San Leo.
Forli.	Forli, Cesena, Rimini, Savignano, Cesenatico.
Ravenna. . . .	Ravenna, Imola, Cervia, Faenza, Castel Bolognese.
Bologna. . . .	Bologna, Cento, Forte Urbano, Medicina.
Ferrara. . . .	Ferrara, Commachio, Lugo, Bagna Cavallo, Ponte di Lago Scuro.

The population amounted in 1800 to 2,400,000; in 1829, to 2,679,000; and in 1833, to 2,728,000; an increase which shows at least some external improvement. All attempts to place the financial system on a proper footing have hitherto failed; in 1837, the revenues amounted to about 13,485,000 dollars, the expenditure to 14,730,000, leaving a deficit of 1,245,000. Of this sum the support of the army engrosses 20, and the interest of the public debt 25, or, according to others, not less than 38 per cent. Into this dilemma the Government has been brought chiefly by its solicitude to restore the ecclesiastical and monastic system of former times in its fullest extent, and to compensate all losses sustained during the French occupation. Recourse is had to expensive loans, which scarcely alleviate the pressure for the moment; while the cause of embarrassment remains unabated, and seems likely to lead at last to the dissolution of the State. The army amounts to 18,748 men. (See GOVERNMENT, p. 568.) *Raumer's Italy*, II.

ROMA (ROME), the capital of the States, is situate on the banks of the Tiber, partly on a plain, and partly on low hills, with their intervening valleys, about 16 miles from the mouth of the Tiber, and between 50 and 60 feet above the level of the sea. The city is divided by the Tiber into two unequal parts, the larger of which, on the left or eastern bank, is Rome properly so called; the smaller portion, on the right bank, is named the Leonine city and Trastevere, and is inhabited by a rude and uncivilized population. The whole city is surrounded by ancient walls about fifteen miles in circuit; but only a part of the inclosed area is occupied by the modern city, which is mostly built upon a plain (the ancient *Campus Martius*), lying along the banks of the Tiber, to the north of the seven hills, which formed the site of ancient Rome. Four of the hills are now almost entirely deserted, or are occupied by gardens, vineyards, scattered buildings, and ruins. The streets, though generally spacious, are often winding and ill-kept. Of the numerous public buildings with which Rome is filled, the 364 churches claim our first attention. Seven of these are styled *basilicæ*, or cathedrals, namely, *San Pietro in Vaticano, San Giovanni in Laterano, Santa Maria Maggiore, San Paolo fuori le mura, San Lorenzo, San Sebastiano*, and *Santa Maria in Trastevere*. San Pietro (St. Peter's), stands on a gentle acclivity in the Leonine city, in the north-western corner of Rome, and is built in the form of a Latin cross, the nave being 607 feet long, and the transept 444. The east front is 396 feet wide and 160 feet high; the pillars which compose it are each 88 feet in height, and 8½ in diameter. The height of the dome, from the pavement of the church to the top of the cross which surmounts it, is 448 feet. In front of the church is a fine piazza, consisting of a double circular colonnade, with an Egyptian obelisk in the centre, and forming altogether an architectural display which is very much admired. St. Peter's occupies the site of Nero's circus, and the spot where St. Peter is supposed to have suffered martyrdom. The present church was erected instead of the more ancient one, between the years 1506 and 1780, having occupied in building two centuries and a half, under thirty-five popes, and cost from fifteen to twenty millions sterling. *San Giovanni in Laterano* (St. John Lateran), is the proper church of the Pope himself, who is its official minister, and on that account ranks above all other priests in the Catholic world; it is here also that the popes are crowned. The church, or some part of it at least, is as old as the time of Constantine the Great. It contains the famous chapel of the Corsini, reckoned the finest in the world, which is said to have cost so much as £400,000. *Santa Maria Maggiore* (St. Mary the Great), is noted for the fine colonnades and unbroken entablatures which divide the nave from the aisles, for mosaics of the fifth century and for the chapels of Sixtus V. and Paul V. *San Paolo fuori le mura* (St. Paul without the wall), is situate on the road to Ostia, south of the city, on the spot where the Apostle Paul is supposed to have been beheaded. It was a very ancient structure, but was destroyed by fire in 1824, and is now in the course of being rebuilt. It is, however, in a very unhealthy situation, and but little frequented. The only other church which deserves particular notice is *Santa Maria ad Martinæ*, or, *the Rotunda*, a large circular building, surmounted by a dome rising 130 feet above the pavement, and terminating with an open window in the centre, by which the church is lighted. The entrance is formed by a magnificent portico of sixteen granite Corinthian columns, each of which is 39 feet high, and its shaft of a single stone. According to an inscription on the entablature of the portico, the building seems to have been erected by Marcus Agrippa, the favourite minister of Augustus, but whether for a Pantheon (a temple of all the gods), or merely as an entrance hall to his baths, is uncertain. It is now, however, dedicated to St. Mary and all the saints, who have supplanted the deities of pagan Rome.

Next to the churches, the palaces attract the attention of the traveller. These are very numerous, and are generally very fine buildings; but sixty of them are such large and ornamental structures as might suffice for sovereign princes rather than for provincial nobles. Our space permits us to notice only those belonging to the Pope. The *Vatican*, the winter palace of the Pope, stands on the Vatican hill, close by St. Peter's, with which it forms a very inharmonious architectural composition. It is a very large heavy building, said to contain 4422 halls, chambers, or galleries, and 22 courts; but the apartments are irregularly arranged, and the whole pile is characterized by want of unity of design. It contains the Pio-Clementine and the Chiaramonti museums, both filled with the masterpieces of ancient and modern art, among which are particularly distinguished the Apollo Belvidere, the Laocoon, and the Antinous; galleries and halls painted by Raffaelle; the Sistine Chapel, which contains the Last Judgment, by Michael Angelo; the Vatican Library, contained in two galleries, as remarkable for their vast extent as for their ornaments, and embracing an immense collection of printed books, with perhaps the richest collection in Europe of rare manuscripts, and numerous pictures and other works of art. The *Quirinal*, another superb palace, on the Quirinal hill, is the Pope's summer residence; the garden attached to it is more than a mile in circuit, and is one of the finest in Italy. It is also named the palace of Monte-Cavallo, from two ancient colossal figures of horses placed there. The *Campidoglio* occupies the site of the ancient Capitol, and contains the palaces of the senator or chief magistrate, and of the conservators or municipal magistrates of Rome, a rich museum of antiquities, and an ancient equestrian statue in bronze of the Emperor Marcus Aurelius.

Rome also contains a great number of scientific and literary establishments, at the head of which may be placed *Universita Romana della Sapienza*, one of the oldest universities in Europe. Next in

importance is the *Roman College*, which may be considered as another university, to which is annexed a fine library, and collections of antiquities, natural history, models of machines, &c. The other principal seminaries are, the college *de Propaganda fide*, where natives of India, Abyssinia, Syria, Armenia, Greece, China, and other foreign countries, are instructed by professors, for the purpose of preaching the gospel to their benighted countrymen; the *Seminario Romano*; the *Collegio Nazareno*; the English, Irish, Scottish, and seventeen other national colleges for students from different countries; the deaf and dumb institution; the Ripa grande institution, where 2000 children are taught useful arts and trades; the Roman academy of St. Luke, where painting, sculpture, architecture, perspective, anatomy, history, mythology, and costumes, are taught by ten professors, &c. &c.

Besides the walls which inclose the site of ancient Rome, there are many other remains of the splendid buildings which adorned "the eternal city;" but of these we can do little more than mention the names. The largest and most imposing is the *Flavian amphitheatre*, or *Colosseum* (Coliseum), a very large oval structure formed externally of three tiers of arches and half columns of different orders, surmounted by a range of Corinthian pilasters without openings. It is said to have been capable, when entire, of containing 100,000 spectators. Half the building has been destroyed, but the remainder is considered as a very grand and imposing structure. The three triumphal arches of Titus, Severus, and Constantine; the two monumental columns of Trajan and Antoninus; the Ælian bridge, now called St Angelo's; ten Egyptian obelisks; the pyramid of Caius Cestius; and the tomb of Cecilia Metella, are still very entire, and are among the finest specimens of the antiquities of Rome. Most of the other remains are merely fragments, as the Cloaca Maxima or great sewer, said to have been constructed in the time of the Tarquins; the circus of Caracalla; three columns of the temple of Jupiter Stator; the theatre of Marcellus, built by Augustus; the baths of Titus, Caracalla, and Diocletian; the temple of peace, and several others; and the mausoleum of Augustus; the *Moles Hadriani*, or tomb of the Emperor Adrian, consisted originally of a large building, ornamented externally with three tiers or ranges of colonnades, forming so many superb galleries, decorated with statues and sculptures, and surmounted by a golden pine apple; but all these have disappeared, and the naked body of the structure now forms the keep or central tower of the Castle of St. Angelo, where the treasures and records of the Court of Rome are preserved. It serves occasionally as a state prison, and communicates by a subterranean gallery with the Vatican palace. The magnificent palace of the Cæsars, on the Palatine hill, has entirely disappeared, its site being covered by gardens; the capitol is occupied by modern buildings, and the site of the temple of the Capitoline Jupiter is said to be now covered by the church of *Santa Maria in Ara Cœli*. Of all the stupendous aqueducts of ancient Rome, the ruins of the Martian and the Claudian only remain, the former of which conveyed the water thirty-five, the latter, sixty miles. Rome, however, is still most abundantly supplied with water, brought into it by several Popes, and distributed by means of fountains, in every part of the city, some of which are very ornamental structures.

In 1800, the population of Rome amounted to 153,000; in 1813, it had fallen to 117,582; but, by 1836, it had again increased to 157,368, of whom 3709 were Jews, 201 Turks and heretics, 37 bishops, 1468 priests, 2023 monks, 1476 nuns, 541 seminarists and collegians; 112,940 church communicants, 40,738 non-communicants; males 81,488, females 72,190. It is the boast of the Romans that in no other city is so large a sum devoted to public charity in proportion to the population; but of the great number of benevolent establishments and institutions, many are of doubtful, and even pernicious tendency; and in spite of the liberality with which the charity is distributed, nowhere is there more mendicity, want, and misery. Besides numerous foundling hospitals, there are thirteen societies for giving doweries to young women on their marriage, and gifts on becoming nuns; and, of 1400 women annually married, 1000 receive dowries from the public purse. There are twenty-two establishments for the diseased, the insane, and the convalescent, which, as a whole, can accommodate 4000 patients. Rome is one of the greatest receptacles for abandoned children, which are brought from distant provinces, and even from Naples. Above 2800 children are annually received by the seven foundling hospitals. The Protestant inhabitants of Rome are now allowed to have a chapel for worship, and to bury their dead in a piece of open ground beside the Pyramid of Caius Cestius. The Campagna di Roma, or country around Rome, is now for many miles completely desolate, and a prey to malaria, which sometimes even pervades the seven hills and penetrates into the streets of the city.

Tivoli (anc. *Tibur*), on the Teverone (Anio), is a small episcopal city, with 6000 inhabitants, 18 miles E. by N. of Rome, in a delightful situation, with several remarkable antiquities, as the remains of the round temple of Vesta or of the Sibyl, the Villa of the Mecænas, and the villa of the Emperor Adrian. The Teverone formed a picturesque cascade at Tivoli; but this has recently been destroyed by diverting the river into a new channel. *Albano*, a small episcopal city, with 4200 inhabitants, is agreeably situate near the western side of the lake to which it gives its name, 14 miles S.S.E. of Rome. On the banks of the lake is *Castel Gandolfo*, where is a fine summer palace belonging to the Pope; and on the east side of the lake, on a long narrow ridge, are the remains of *Alba Longa*, the parent and early rival of Rome. *Frascati*, the ancient *Tusculum*, a small episcopal city, with 4000 inhabitants, 12 miles E.S.E. of Rome, occupies a fine situation on the side of a hill, and contains several remains of antiquity, particularly those of Cicero's villa. *Subiaco*, a small town of 2000 inhabitants, near the Teverone, with a castle belonging to the Pope, the remains of a palace of Nero, and the rich convent of St. Benedict. *Palestrina*, the ancient *Prænesta*, 24 miles east of Rome, with 3500 inhabitants. From its lofty citadel, now called Castello di San Pietro, which Hannibal and Pyrrhus are said to have ascended for the purpose of viewing Rome, the prospect over the plain of Rome, and the valley of the Hernici, towards Anagni, is splendid. *Labano*, a fortified town beyond Palestrina, with 3000 inhabitants. *Ostia*, at the mouth of the southern branch of the Tiber, 16 miles from Rome, formerly the flourishing port of that city, is now almost entirely abandoned on account of malaria; "and of all the wretched places on the coast in the vicinity of Rome, Ostia, in its present state, is one of the most melancholy." At the mouth of the other branch of the river is *Fiumicino*, adjoining the remains of the port and docks constructed by the Emperors Claudius and Trajan. It contains a tower, surmounted by a lighthouse.—(*Gell's Top.* II. 134.) About 10 miles N.W. of Rome is the site of the ancient Veii, the remains of which are now almost completely obliterated.

Velletri, an irregularly built episcopal city, with 10,000 inhabitants, 23 miles S.E. of Rome, is finely situate on a height, from which there is an extensive view. *Norma* (*Norba*), 13 miles from Velletri, a small town, contains the remains of ancient Cyclopean walls, with five gates and two towers. *Terracina* (anc. *Anxur*), a seaport town, with 4000 inhabitants, on the Gulf of Gaeta, 60 miles S.E. of Rome, and on the east side of the Pontine marshes. *Frosinone*, 45 miles E.S.E. of Rome, is built on the top of a lofty hill, whose base is washed by the river Cosa, on the site of the ancient *Frusino*, a large and powerful Latin city. At the distance of 10 miles is *Alatri*, on the slope of a hill crowned by the citadel, whose walls, as well as those of the town itself, are of the most gigantic dimensions, evidently the work of the Pelasgi. *Benevento*, 130 miles E.S.E. of Rome, and 32 N.E. of Naples, an archiepiscopal city, with 18,000 inhabitants, occupies a fine situation, but its streets are narrow and dirty; and its public buildings neither grand nor elegant. It contains, however, a beautiful triumphal arch, erected A.D. 113, in honour of the Emperor Trajan, and still in good preservation; and other Roman

remains. The province of Benevento is entirely separated from the rest of the Roman States, and, during the French ascendancy, was formed into a principality in favour of the celebrated Talleyrand; and also *Ponte Corvo*, another separate territory, belonging to the Pope, in favour of Marshal Bernadotte, now King of Sweden.

Civita Vecchia, a small episcopal seaport town, with 7000 inhabitants, is a free port, has a naval arsenal, and considerable trade; 40 miles N.W. of Rome. *Corneto*, 10 miles N. of Civita Vecchia, is noted for the great number of Etruscan antiquities found in its neighbourhood. Similar antiquities have also been found at *Piano di Voce (or Vulce)*, *Ponte Bodio*, *Montalto*, *Canino*, and at *Civita Turchina*, one league north of Corneto, the site of the ancient Tarquinii. *Tolfa*, noted for its rich alum mine, on the range of the woody mountains of Cervetere, which were anciently called the Lucus Silvani. Tolfa contains a great manufactory of saltpetre. At *Cervetere*, the ancient *Cære*, a sepulchral building has lately been discovered under ground, which is considered to be a very ancient specimen of architecture.

Viterbo is a neatly-built episcopal city, with 13,000 inhabitants, at the foot of a hill surrounded with gardens, vineyards, and country houses, 42 miles N.W. of Rome. *Orvieto*, also an episcopal city, 63 miles N.W. of Rome, noted for its fine gothic cathedral, and its excellent wine. Population 8000. *Aquapendente*, a small ill-built town, with a cathedral, five churches, and 2400 inhabitants, 15 miles W of Orvieto. *Ronciglione* is a flourishing town, with 3357 inhabitants, between Monte Rosi and Viterbo, and the fourth post from Rome on the road to Florence. *Civita Castellana*, 35 miles N. of Rome, a small town in a strong and beautiful situation, is supposed to occupy the site of the ancient *Falerii*. Between Civita Castellana and Nepi is a famous grotto, cut in the rock, during a period of fifteen years, by the hermit Giovanni Andrea Rodio, who died in 1819. *Rieti* (anc. *Reate*), a town of very great antiquity, 43 miles N.N.E. of Rome, is a bishop's see, and is noted for the fertility of its neighbourhood, the industry of its inhabitants, and its remains of antiquity. Population 12,000. *Spoleto*, a large but thinly-peopled episcopal city, with 7000 inhabitants, 65 miles N. by E. of Rome, is particularly noted for the remains of its ancient magnificence. *Narni* and *Terni*, are two towns on the Nar; the former a place of great antiquity, and noted for a fine Roman bridge, called the Sanguinazio; and the latter celebrated for a waterfall, called the *Cascade delle Marmore*, formed by the river Velino, where it joins the Nar, after draining the valley of Rieti. *Pie di Luco*, on a lake of the same name near Spoleto, is noted for one of the finest echoes known, which repeats distinctly eleven syllables. *Bolsena*, an unimportant village, on the lake to which it gives its name, represents the ancient *Vulsinii*. *Montefiascone*, S.E. of the lake, produces wine so excellent that a German prelate died there from drinking it to excess.

Perugia, 90 miles N. of Rome, an episcopal city, built on a hill not far from the right bank of the Tiber, in a fertile and well-cultivated country, possesses some fine remains of antiquity, a university, an antiquarian museum, a library, several fine churches, a good theatre, some silk manufactures, and 30,000 inhabitants. *Foligno*, 22 miles S.E. of Perugia, is a commercial town, with manufactures of wax candles, cloth, paper, and comfits, a museum of antiques, and 9000 inhabitants. *Assisi*, 85 miles N. of Rome, an episcopal city, with 4000 inhabitants, occupying a conspicuous situation on a hill, is the birth-place of San Francisco, the founder of the order of Franciscan monks, and contains his tomb, which still attracts great crowds of pilgrims; and also a double church (upper and lower), built in the 13th century in honour of the saint, and ornamented with pictures, of the earliest modern artists, in a good state of preservation. The celebrated church of *Santa Maria degli Angeli*, near Assisi, has been destroyed by an earthquake. *Gubbio*, 17 miles N. by E. of Perugia, with an industrious population of 4000, is noted for its antiquities, among which are the Eugubian tables, an Etruscan relic, discovered in 1456 in the ruins of the temple of Jupiter Apenninus, which have puzzled antiquaries to decipher their contents. *Camerino*, 32 miles east of Perugia, is an episcopal city, with a secondary university, and 7000 inhabitants. *Fabriano*, an episcopal city, with 7000 inhabitants, and manufactures of paper and parchment. *Fermo*, is an archiepiscopal city, with a secondary university, and several fine buildings, among which are the cathedral and the theatre, 107 miles N.E. of Rome. Population 7000. *Macerata*, a large town of 12,000 inhabitants, with a university and other literary establishments, 15 miles N.W. of Fermo. At *Tolentino*, 10 miles S.W. of Macerata, a peace was concluded between Buonaparte and the Pope in 1797. *Ascoli*, is a well-built handsome town, with a cathedral, numerous other churches, and 12,000 inhabitants, 15 miles from the Adriatic, and 90 N.E. of Rome. *Loreto*, a considerable town, with 8000 inhabitants, stands on the coast of the Adriatic, 124 miles N.N.E. of Rome. Its celebrated church of Our Lady is superstitiously believed to contain the *Santa casa*, or house in which the Virgin Mary dwelt at Nazareth, and which was transported by angels to this place. It attracts, of course, great crowds of pilgrims, and once contained a large and valuable treasury, the greater part of which has been converted by its guardians to other than pious uses.

Ancona, an episcopal city, built in the form of an amphitheatre, on the slopes of two hills which rise from the shore of the Adriatic, 132 miles N.N.E. of Rome, is a busy commercial town, with a citadel, a fine quay, and a harbour formed by a pier 2000 feet in length, 100 in breadth, and 65 above the water, and having at its extremity a lighthouse with a revolving light. — Population 24,000, many of whom are Jews, Greeks, and Moslems. Its manufactures consist principally of wax, tallow, silk hats, and paper. The harbour is well adapted for building and repairing ships, and being a free port, is frequented by traders of all nations. *Sinigaglia*, a seaport town on the coast of the Adriatic, N.W. of Ancona, with 8000 inhabitants, has an annual fair in July, which is the best frequented in Italy, and one of the first in Europe. *Urbino*, 45 miles W. by N. of Ancona, once the capital of a duchy, and now an episcopal city, is noted as the birth-place of Raffaelle and Bramante, some of whose works embellish its cathedral and the church of the Capuchins. *Pesaro*, a seaport town near the mouth of the Foglia, with a cathedral, a theatre, and a good harbour. *Fano*, an episcopal seaport town, stands near the mouth of the Metaro (Metaurus.)

Rimini, a large but thinly-inhabited episcopal city, near the mouth of the Marecchia, which forms a harbour adapted only for fishing boats. The city contains some good streets, places adorned with fountains, a number of well-built houses and churches, a public library, and several important remains of antiquity, with 15,000 inhabitants. *San Marino*, 12 miles S.W. of Rimini, a small town on a lofty hill, is the capital of a sovereign republic, whose territory contains three castles, five churches, and about 5000 inhabitants.

Ravenna, an archiepiscopal city, between the Montone and the Ronco, 175 miles N. of Rome, adjoins some large marshes, which render the air unwholesome. It is a place of great historical celebrity, but is now very much decayed, and contains only about 16,000 inhabitants. *Forli*, a busy manufacturing town with 16,000 inhabitants, 18 miles S.W. of Ravenna. *Cesena*, is also a busy town, with 12,000 inhabitants, 20 miles S. of Ravenna. *Cervia*, in the same district, contains 4000 inhabitants, with immense salines. *Faenza*, a large and well-built episcopal city, 19 miles S.W. of Ravenna, has considerable trade and manufactures, with 14,000 inhabitants. Faenza has given its name *(faience)* to the pottery, called *majolica* by the Italians, the manufacture of which is still considerable. *Imola*, an episcopal city, with 8000 inhabitants.

Bologna, a large archiepiscopal city, with an industrious commercial population, is situate on a canal, between the Reno and the Savena, in the midst of a fine country covered with elegant houses and villages. It is a well-built town, adorned with a number of fine buildings, and has always been

distinguished for its important literary and scientific institutions; the principal of which are the university, one of the most ancient in Europe; the botanic garden; the institute, a magnificent establishment with rich collections of books, and objects of chemical, anatomical, and physical science, and antiquities; a fine observatory; an academy of the fine arts; galleries of sculpture and painting, &c. — Population 71,000.

Ferrara, a large and fortified archiepiscopal city, on a branch of the Po, and a canal which connects that river with the Macstro. It contains a university, a public library, a large, strong, and regular citadel, and 24,000 inhabitants. The city occupies an unwholesome situation, in a flat marshy country, 30 feet lower than the surface level of the Po, which is prevented by dykes from overflowing it. *Porto di Lago Scuro*, a small town on the Po, with a great transit trade and 5000 inhabitants.

§ 7. *The Kingdom of Naples, or The Kingdom of the Two Sicilies.*

This kingdom consists of two distinct portions; the continental, styled *Al di qua de' Faro*, or, On this side of the strait; and the insular, consisting of the Island of Sicily, or, The other side of the strait. The former occupies the southern portion of the peninsula of Italy, from the parallel of 43 N. and the meridian 13 E. to the Strait of Messina, extending in length 380 miles, but varying very much in breadth, and comprising an area of 37,500 square English miles. The kingdom is divided into fifteen intendancies, as stated in the following table: —

Intendancies.	*Cities and Towns, &c.*
Napoli, ...	NAPOLI (NAPLES), Puzzuoli, Somma, Ottajano, Casoria, Portici, Resina, Torre del Greco, Torre del Annunziata, Castelamare, Sorrento; the ruins of Herculaneum and Pompeii; the islands of Procida, Ischia, Capri.
Terra di Lavoro,	*Caserta*, Piedimonte, San Germano, Monte Cassino, Sora, Arpino, Atina, Gaeta, Capua, Santa Maria, Nola, Acerra, Aversa, Maddaloni; the Pontian Islands.
Principato Citra,	*Salerno*, Campagna, Sala, Vallo, Amalfi, Nocera, Cava; the ruins of Paestum or Poseidonia.
Principato Ultra,	*Avellino*, San Angelli de Lombardi, Ariano, Monte Vergine, Atripalda, Montella, Solofra.
Molise, ...	*Campobasso*, Isernia, Larino, Termoli, Agnone.
Abruzzo Ultra I.,	*Teramo*, Campli, Penne, Civitella del Tronto, Senarica.
Abruzzo Ultra II.,	*Aquila*, Avezzano, Capistrello, Anglizia, Civita Ducale, Pescina, Sulmona.
Abruzzo Citra, .	*Chieti*, Lanciano, Ortona a mare, Pescara, Vasto, San Vito.
Capitanata, . .	*Foggia*, Ascoli, Bovino, Lucera, Manfredonia, Monte San Angelo, San Severo. The Isles of Trimiti, &c.
Terra di Bari, .	*Bari*, Andrea, Terlizzi, Bitonto, Altamura, Gravina, Barletta, Trani, Bisceglia, Molfetta, Giovenazzo, Monopoli.
Terra d'Otranto,	*Lecce*, Sta Maria di Leuca, Alessano, Otranto, Brindizi, Francavilla, Taranto, Manduria, Gallipoli, Nardo, Galatina.
Basilicata, . . .	*Potenza*, Lagnero, Tursi, Matera, Montepeloso, Melfi, Oppido, Muro.
Calabria Citra, .	*Cosenza*, Bisignano, Cassano, Castrovillari, Corigliano, Rossano, Scigliano, Paola or Paula, Longobuco.
Calabria Ultra I.,	*Reggio*, Scilla, Seminara, Palmi, Gerace, Bova.
Calabria Ultra II.,	*Catanzaro*, Sta Severina, Cotrone, Nicastro, Pizzo, Monte Leone, Parghelia, Tropea, Nicotera, Stilo, Serra.

These provinces are subdivided into districts, circles, and communes. Of the whole surface of the kingdom about 14,100 square miles are under tillage or cultivated as orchards. Since the separation of the country from Spain, the population has been gradually increasing; it amounted, in 1781, to 4,709,000; and in 1835, to 5,946,000. During the French domination the military institutions corresponded essentially with those of France, and these have been in many respects retained. The peace establishment amounts to about 57,000 men; every man is liable to the conscription from the completion of his eighteenth to the completion of his twenty-fifth year; the period of service for the infantry extends to six years, and for the cavalry, to eight. The financial system is in a very unsatisfactory state; for the amount of the total revenue, Raumer says, *Italy and the Italians* in 1826, vol. ii. he finds abundance of figures, but nobody to vouch for their accuracy, as the truth is either purposely concealed, or alterations made in the system of management render it impossible to reconcile the various items with sums. Upon the whole the revenue and the expenditure have kept progressively increasing, though the latter has too often exceeded the former. The revenues are said to have amounted, in 1832, to 27,112,000 ducats, £1,545,624 sterling. The estimated revenue for 1838-9 amounted to 26,670,000 ducats; of which 14,230,000, or more than a half, were set apart for the financial management, the royal household, and the public debt; for the council of ministers, 44,040; ministry of foreign affairs, 251,000; ministry of justice, 727,000; ministry of religion, 1,000; ministry of the interior, 1,846,000; army, 7,200,000; navy, 1,330,000; and police, 2,000,000.

The productions of the kingdom are of the most various description, and might be made very valuable. Corn, wine, oil, flax, hemp, oranges, and other fruits, and all kinds of vegetables might be raised in quantities equal at least to twice the consumption of the inhabitants. Rock-salt, coal, and other minerals abound, but scarcely any attempt has been made to work them. In many parts of the interior timber for ship-building is to be found, but the expence of conveying it to shipping ports would more than equal the expense of importing it from other countries. Agriculture and industry of every sort are in the rudest state. Farming implements, carts, ploughs, and tools of every kind, are of the most wretched description. A miserable cotton manufactory, a sort of Government monopoly established at Salerno, glove and hat manufactories at Naples, with coarse linens and cloths, comprise nearly all the branches of manufacturing industry. For some time past the government has extended support, especially to the shipping of Naples, in the fictitious shape of premiums, thus taxing the community for the benefit of a few traders. Premiums have also been held out for the establishment of manufactures, while roads, and other facilities to the promotion of agriculture and the productions of the soil generally, have been entirely neglected since the time of Murat, with the solitary exception of a railway, which has been constructed from Naples to Portici. The neighbouring seas abound with fish, the forests contain game, and the marshes and shores are frequented by wild fowl. No means have been used to drain the marshy grounds for the purpose of preventing malaria; and all the harbours, even that of Naples, are in the most neglected condition. In short, no country in Europe possesses great natural advantages; and in none has so little been done to develope the abundant resources and riches of the kingdom. The tariff has been ruinous to the Customs; two-thirds of the sugar consumed in the country are smuggled, chiefly from the Adriatic. A trade which would create an extensive demand for the produce of the kingdom; a less expensive and less rigorous system of raising the land taxes and octrois; a diminution in the rate of taxation, especially in agriculture; liberal commercial regulations with a moderate tariff; and perfect security of person and property, are the changes necessary to render the kingdom of the two Sicilies productive

and flourishing. At present it is one of the poorest, worst governed, and least flourishing of the European communities. Taking into account the productive character of the soil, it has been estimated that the two portions of the kingdom are capable of yielding abundant food for at least twenty millions of inhabitants, or three times the present amount. (*Report on the Commercial Relations of the Kingdom of the Two Sicilies, by J. Macgregor; presented to Parliament, August* 1840; *page* 50.)

Cities and Towns.

Intendancy of Naples. NAPOLI (NAPLES), the capital of the kingdom, and one of the largest cities in Europe, is situate on the northern shore of a beautiful bay, opening to the west, in N. lat. 40° 50', and E. long. 14° 22'; about 120 miles S.E. of Rome. Nothing can be more beautiful than Naples when viewed from the bay, rising as it does from the sea on an amphitheatric slope, crowned with the sombre castle of San Elmo. The city is 9 miles in circumference, and contains about 350,000 inhabitants; but though the buildings are lofty and solid, and some of the streets wide and straight, yet, relatively to its extent and importance, it contains few edifices which can be compared with those of the other great cities of Italy. Its churches, overloaded in the interior with gilding, pictures, and other ornaments, are little remarkable for their dimensions or architecture; and nearly the same may be said of the palaces and other public edifices. The *Royal palace*, the King's ordinary residence, is, however, remarkable for its vast extent, the architecture of its front, its magnificent stair, and the beauty and richness of its rooms. There is another royal palace on the *Capo di Monte*, overlooking the city; and a third named *di Chiatamone*, remarkable for its delightful situation and its hanging garden. The other principal buildings worthy of notice are: The large edifice of the *Studii Publici* or *University*; the *Royal Museo Borbonico*, now enriched with antiquities, and a collection of paintings, in a building originally erected for the Studii, which were transferred to the Convent of Gesu Vecchio, in 1790; the *Reclusorio*, or poor's house; the hospital for incurables, and that of the Annunziata, to which is annexed a well-endowed foundling hospital; the arsenal; the archbishop's palace; the theatre of St. Ferdinand, the finest, in respect of its architecture, of the ten which the city possesses; the Vicario or Castel Capuano, an old royal palace, now occupied by the courts of justice; the Theatre of San Carlo, one of the largest and finest in the world; and the palace of the Royal Ministers, or of the Finances, finished in 1826, and remarkable for its architecture and great size. Among the numerous churches, the only one worthy of particular notice is the new cathedral or church of San Gennaro (Januarius), the patron saint of Naples, whose head, and two small vessels filled with his blood, are preserved in a chapel called El Tesoro. The blood of the saint is publicly exhibited three times a-year, in May, September, and December, on which occasions it melts in its vase; if the fusion take place quickly, the joy of the people is great; but if there be any unexpected delay, their tears, prayers, and cries, are excessive; as the absence of the miracle is supposed to announce some dreadful impending calamity. The principal scientific and literary establishments are: The University; the lyceum del Salvatore; the school of paleography, attached to the general archives of the kingdom; the school of painting and sculpture; the establishment for unrolling and decyphering the MSS. found at Herculanum; the military college; the military school; the marine academy; the veterinary school; the two great schools for girls, Miracoli and San Marcellino; the two colleges for music, that for males at San Pietro a Majolla, and that for girls at the Concordia; the royal poor's house, where 6000 children are taught arts and trades, at the cost of £20,000 a-year to the Government; the chairs of clinical surgery, midwifery, opthalmologie, and surgery attached to the public hospitals; the botanic garden; two observatories; the topographical board; four public libraries, among which is the Borbonica, one of the richest in Europe; the cabinets of mineralogy, natural history, physics, and chemistry; the royal museum of antiquities; the Borbonic academy, divided into the three branches of antiquities, sciences, and fine arts, to the support of which the King assigns an annual revenue of £2400; the institute of encouragement; and the societies Pontaniana and Sebezia. The fortifications of the city are of little military importance; they consist of five forts or castles, the principal of which are, that of San Elmo, on a hill behind the city, which it completely commands, the Castello del'Ovo (egg or oval castle), built on a rock in the sea, and the Castello Nuovo (new castle), which contains a triumphal arch and several other curious objects. The harbour is artificial, being formed by a great mole, which is continually crowded with people, and contains a light-house and a fine well. In a hill, in the northern part of the city, are the catacombs, which served as burial places in the early ages of the church, and which are said to be more extensive than those of Rome and Syracuse. At the south-west corner of the city is the tufa hill of Pusilipo, through which the public road is carried by a gallery or tunnel, a mile in length; and at the east end of the gallery is Virgil's tomb.

Puzzuoli, a small episcopal city, with 8000 inhabitants, stands on the coast, 6 miles W. of Naples, in a delightful situation, where were many villas of the ancient Romans. It contains the remains of an amphitheatre called the Colosseo, nearly as large as that of Rome, the ruins of a temple of the nymphs, and one of Serapis, which has given rise to some interesting speculations among geologists. In the neighbourhood are several remarkable curiosities; the Lucrine Lake, the Lake of Avernus, the Lake of Fusaro noted for its excellent oysters, the Dog's Grotto, the Lake of Agnano, the Solfatara, and the Monte Nuovo.—(*See anté, page* 563.) On the west side of the bay, opposite to Puzzuoli, is *Baia*, a miserable place, almost deserted, but with a safe road and harbour, and remarkable in ancient times as the summer retreat of the Roman nobles, of whose villas, temples, and tombs it contains numerous remains. To the north of Baia are the ruins of the ancient city of Cumæ, and the Sibyl's Grotto, a tunnel which penetrates to a great depth, but is now almost choked up with rubbish; and to the south the promontory and harbour of *Miseno*, which was the station of the Roman fleet for the protection of the western part of the Mediterranean. *Portici*, 4 miles S.E. of Naples, at the foot of Vesuvius, is a small town with a royal palace and 5000 inhabitants. Almost contiguous to Portici is *Resina*, a large village with 9000 inhabitants, on the site of *Herculaneum*, a Roman town which was buried under a thick bed of gravel, at the terrible eruption of Vesuvius in A. D. 79, and first discovered in 1713. *Torre del Annunziata*, a town with 9000 inhabitants, on the coast, 12 miles S.E. of Naples, at the southern base of Vesuvio, is noted for its great manufacture of military arms, and for its vicinity to *Pompeii*, an ancient city which was buried, like Herculaneum, in the year 79, and discovered in 1755. A considerable part of the ancient town has been cleared, exhibiting the remains of a forum, and of several fine temples and theatres, besides private houses, baths, and streets, which give a perfect idea of a Roman city. There are several other towns round the base of Vesuvius, as *Torre del Greco*, on the sea shore, with 13,000 inhabitants; *Somma*, with 7000; *Ottajano*, with 15,000; *Santa Anastasia*, with 6000. The neighbourhood of these towns produces the famous wine known by the name of *Lacrima Christi* (Christ's tears.) *Castelamare*, *Vico*, and *Sorrento*, three towns on the south-east coast of the bay, opposite Naples. Castelamare is an episcopal city, with 15,000 inhabitants, built in a delightful situation, above the ruins of the ancient buried city of *Stabiæ*, from which several manuscripts, statues, and paintings have been dug. Near it is *Quisisana*, a small town, with a fine summer palace of the king, and the principal building yard for the royal navy. Sorrento is a small archiepiscopal city with 5000 inhabitants, in a fine situation, noted for its excellent silk, and for its antiquities.

Terra di Lavoro.—CASERTA, 13 miles N. by E. of Naples, a small town with 5000 inhabitants, oc-

cupies a fine situation, and has a magnificent royal palace, and an aqueduct across the valley of Maddaloni, composed of three ranges of arches. The water course, of which it forms a part, is 27 miles long, and is carried through Mont Garzano by a remarkable tunnel, more than 3000 feet long. Here is also the *Colony of San Leucio*, founded by King Ferdinand IV., which exhibits, on a small scale, a model of all that is necessary for the education of the people. *Piedmonte*, noted for its industry and its great works, where the cotton of the kingdom is manufactured.—Population 5000. *San Germano*, a small town, with 5000 inhabitants, near which is the celebrated monastery of *Monte Cassino*, considered as the oldest in Europe, containing a fine church, and adorned with precious marbles and superb paintings, and a library rich in valuable documents. *Arpino*, the birthplace of Cicero, Marius, and Agrippa, is a small town with 8000 inhabitants, who are engaged in the manufacture of cloth and parchment, and carry on a brisk trade. It still contains the remains of the ancient town with its Cyclopian walls, and a large paper-work, which employs 200 people. *Atina*, a small town with Cyclopean remains. *Gaeta*, a strongly fortified episcopal city, with a harbour, one of the safest and best in Italy, and several remains of antiquity; the inhabitants amount to 14,000, besides the garrison. *Capua*, a fortified archiepiscopal city, with a citadel considered one of the keys of the kingdom, on the Volturno, 18 miles N. of Naples. In its vicinity are the remains of the ancient capital of Campania, among which there is an amphitheatre. *Santa Maria*, a large market town, with 9000 inhabitants, and a large prison, is the seat of the provincial tribunal. *Nola*, an episcopal city, with 5000 inhabitants, near the famous Phlegræan plains, is celebrated for its ancient remains, and particularly for the tombs, in which have been found great numbers of vases, and other curious objects. It was here that the Emperor Augustus died; and it is said that bells were first used here, about the end of the fourth century, by one of its bishops, to summon his people to worship. *Aversa*, an episcopal city, of 16,000 inhabitants, with a large foundling hospital and a house for idiots. *Maddaloni*, a fine town, with a royal college, and a great market held twice a-week, for the supply of provisions to the capital.

Principato Citra.—SALERNO, an archiepiscopal and commercial city, with 11,000 inhabitants, is situate on the gulf to which it gives its name; it is noted for its ancient school of medicine, and contains a lyceum, and the palace of the Intendant, one of the finest of the provincial government residences in the kingdom. *Amalfi*, a small archiepiscopal city, on the rocky coast west of Salerno, with about 3000 inhabitants, acted a distinguished part in the middle ages, by its numerous commercial navy, with which its citizens traded to all parts of the then known world. It was here that a copy of the Pandects was discovered in the 12th century, that the mariner's compass was invented, or at least perfected, and that the order of the Knights of St. John of Rhodes and Malta originated. *Nocera*, an episcopal city, with 7000 inhabitants, and a fine church of Santa Maria Maggiore, resembling the Pantheon at Rome, and one of the oldest in Italy. *Cava*, an episcopal city, with an industrious population, and a celebrated abbey, which possesses a fine library particularly rich in Lombard manuscripts. On the coast, 23 miles S. by E. of Salerno, are the celebrated ruins of *Pæstum*, or *Posidonia*, in the midst of a pestilential desert, where, after having been long forgotten, they were discovered in 1755. The principal remains are portions of the city walls, an amphitheatre, the northern gate of the city, and three temples of colossal dimensions, still very entire, and of the most admired architecture.

Principato Ultra.—AVELLINO, an episcopal city, with an industrious population of 13,000, and a royal college. *Monte Vergine*, a celebrated abbey and sanctuary, with valuable archives. *Sudefra*, a small town of 6000 inhabitants, with numerous tanneries and other works.

Molise.—CAMPO BASSO is a small town with 8000 inhabitants, a royal college, and numerous manufactures, among which the cutlery is particularly noted. The fine road which passes through it, forming the communication between Naples and the Adriatic coast, has rendered it the first commercial place in the kingdom. *Agnone*, a town of 7000 inhabitants, with copper manufactures, which are considered the best in the kingdom. *Isernia*, a small episcopal city, with numerous remains of antiquity.

Abruzzo Ultra I.—TERAMO, an episcopal city, has 9000 inhabitants, and a royal college. *Giulia Nuova*, a very small town, with an important custom-house. *Civitella del Tronto*, a fortified town.

Abruzzo Ultra II.—AQUILA, a fortified episcopal city, on a hill near the Aterno, with a lyceum, and 8000 inhabitants, is one of the best built and most commercial places in the kingdom. *Arezzano*, a town with 6000 inhabitants, near the outlet of the Lake of Celano. *Sulmona*, an episcopal city, with 8000 inhabitants, is noted for comfits, and as the birth-place of the poet Ovid.

Abruzzo Citra.—CHIETI, a fine archiepiscopal city on the Pescara, contains a royal college, a society of agriculture, arts, and trade, and about 13,000 inhabitants. *Lanciano*, an archiepiscopal city, with 9000 inhabitants, is considered as the most commercial place in the Abruzzi.

Capitanata.—FOGGIA, a well-built commercial town, in an unhealthy situation, on the Cervara, contains a tribunal of commerce, a school of rural economy, and a fine custom-house. Population of town and district about 21,000. *Manfredonia*, an archiepiscopal city, is situate on a gulph of the Adriatic, with 5000 inhabitants. *Lucera*, an episcopal city, with a royal college, a civil and criminal tribunal, and about 8000 inhabitants. *Canosa*, a very ancient town, with 4000 inhabitants, not far from the Ofanto, possesses the remains of an aqueduct, an amphitheatre, and a triumphal arch. In the vicinity is the field of *Cannæ*, where Hannibal gained a signal victory over the Romans.

Terra di Bari.—BARI, a fortified archiepiscopal and commercial city, with a harbour on the Adriatic, a lyceum, several manufactures, a fine theatre, and 19,000 inhabitants. *Trani*, a fine archiepiscopal city, on the Adriatic with a harbour, and 14,000 inhabitants. The tower of its cathedral is one of the highest in Italy. *Barletta*, a fine town, is agreeably situate on the shore of the Adriatic, with a harbour, and 18,000 inhabitants. It has a fine cathedral, and other remarkable buildings; the rich salines in its vicinity, and its flouri-hing trade, render it a place of considerable importance. *Molfetta*, an episcopal city, with 11,000 inhabitants, has linen manufactures, and considerable trade. *Altamura* is noted for remains of antiquity, and its fairs, with about 16,000 inhabitants. *Monopoli*, an episcopal city, is noted for the industry of its inhabitants, for the subterranean habitations found in the vicinity, which are supposed to have been formed in very remote antiquity. At the distance of a few miles are the ruins of the ancient *Egnatia*. *Giovenazzo* is a small town, with 6000 inhabitants, and a large foundling hospital.

Terra d'Otranto.—LECCE, the capital, is a well-built, commercial, episcopal city, with fortifications, and about 14,000 inhabitants. *Taranto*, a fortified archiepiscopal city, with extensive salines, a harbour nearly filled up, and about 14,000 inhabitants. *Brindisi*, a small archiepiscopal city, with a harbour, considerable trade, and 6000 inhabitants, is a place of great celebrity in Roman history. *Gallipoli*, a small episcopal city, with important fortifications, a harbour, and some trade. Population 8000. *Galatina*, a small trading town, in a delightful situation.

Basilicata.—POTENZA, is an episcopal city, with a civil and criminal tribunal, a royal college, and 9000 inhabitants. *Matera*, an archiepiscopal city, with a college, and about 11,000 inhabitants.

Calabria Citra.—COSENZA, a busy and commercial archiepiscopal city, with a civil and criminal tribunal, a royal college, a fine cathedral, and several other remarkable buildings. Population 9000. *Castrovillari*, a small town, with numerous plantations of cotton, mulberries, and fruit; in the

vicinity, near Mont Pollino, is made the famous cheese called caccio-cavallo. Population nearly 6000. *Longobuco*, a small town, in the vicinity of which are iron mines.

Calabria Ultra.—REGGIO, an archiepiscopal city, on the Strait of Messina, is the capital of Calabria Ultra I., with a civil and criminal tribunal, a royal college, and a considerable public library. It is considered the wealthiest provincial city of the continental part of the kingdom, for which it is indebted to the commercial activity of its citizens. Population 17,000. *Gerace*, a small episcopal city, with 3000 inhabitants; in the vicinity of which are thermal springs, and the ruins of the ancient *Locri*. *Scilla*, a small place representing the ancient Scylla, so noted for its danger to those sailing through the Strait of Messina. CATANZARO, the capital of Calabria Ultra II., an episcopal city, occupying a height between the mountains and the Ionian Sea, has a civil and criminal tribunal, a lyceum, a harbour, and 11,000 inhabitants. *Monte Leone*, an episcopal city, with a royal college, and about 7000 inhabitants. *Potrome*, a very ancient episcopal city, with considerable trade, and a harbour on the Ionian Sea. *Stilo*, a small place, with iron mines.

§ 8. *The Island of Sicily.*

This lovely island is situate in the Mediterranean Sea, adjoining the south-western extremity of Italy, from which it is separated by the narrow Strait of Messina. Its greatest length is about 190 miles, and its greatest breadth about 106, the superficial area being 8067 square English miles, and the population about 1,800,000. The island is studded with mountains; the principal range of which extends in the direction of east and west, nearly parallel to the north coast from the Strait of Messina to the western point, with a branch which starts off near the middle of the island, and stretches to the south-east, terminating at Cape Passaro. Among these mountains, and sometimes on their very tops, are plains of moderate extent, some of which are nearly 1000 feet above the level of the sea. The predominating rocks are the tertiary, secondary, and volcanic; the older formations being less abundant. Primitive rocks occur near Messina, where the prevailing species appears to be gneiss. The transition rocks constitute a chain of hills which extends obliquely from Melazzo on the north coast to Taormina on the east. A large sandstone deposit occupies a great part of the central chain, extending along part of the north coast; and resting upon it is a formation of dolomite and limestone, which compose the north-western portion of the island. Above these are marls and limestone, which are again overlaid by a conglomerate containing shells of species still existing in the Mediterranean, with a superincumbent deposit of bone breccia. Above these is a diluvial deposit, of which there are two kinds, the oldest occupying considerable heights, the newer covering the bottoms of the valleys. The tertiary rocks, so abundant in the island, contain beds of common salt, sulphur, gypsum, alum, and beautifully crystallized sulphate of strontites. On the eastern coast, from a base of eighty miles in circumference, rises the gigantic volcanic cone of *Monte Gibello (Ætna)*, to the height of 10,870 feet, of which a splendid section is displayed on the east side, in the *Val di Bove*, which penetrates far into the body of the mountain, and exposes the strata of which it is composed. Etna has been an active volcano since the dawn of history; and its huge mass seems to be entirely composed of volcanic matter. Its base exhibits all the fruit trees peculiar to the transition zone, rich corn fields intermixed with vineyards and olive groves and orange trees, producing altogether a variety of foliage, such, perhaps, as cannot be seen in any other part of Europe. Higher up is the forest region, containing the oak, the beech, the ash, horse chestnuts in the greatest abundance, and plum trees: and still higher are woods of birch, which are scanty on the southern side but very numerous on the north. Beyond the birches every thing green disappears, and the only shrub is bivona. Above all these is the region of bare lava and snow, in the midst of which the sulphur cone rises with a very steep ascent to the full height of Vesuvius, or about 3000 feet. The top of the crater, is above two miles in circumference, and, when quiescent, several hundred feet deep, pouring forth sulphureous vapour from thousands of small openings. The only perpetual snow, however, occurs in shaded crevices, above the height of 9000 feet. Sicily is not rich in metals; the mountains to the north-west of Taormina present traces of a gold mine said to have been worked at a very remote period; mines of silver, copper, lead, and iron are also mentioned. Beds of sulphur occur abundantly in the blue tertiary clay, from which Europe has long been supplied with that mineral. The blue clay also contains beds of rock salt, of which the most considerable are at Alimina, north-east of Castro Giovanni, where this substance is found both massive and crystallized. The climate of Sicily is very much the same as that of Calabria; its summers are very hot, while, on the contrary, frost is scarcely known in winter. The natural vegetable productions, and the objects of agricultural industry are likewise nearly the same. The wheat of Sicily is reckoned the finest in Europe; the vine is also extensively cultivated, and produces in some places excellent wine. The sugar cane, the custard apple, and the date, are cultivated; and the enclosures are surrounded by the American aloe, which forms an impenetrable fence. By the side of the plane, the poplar, and the willow, grow the cactus tuna, or prickly fig, the orange, the citron, the olive, the myrtle, the laurel, the carob tree, and the pomegranate; while arbutus and tamarisk abound upon the coasts. The dates of Girgenti on the south coast are said to be excellent; but at Palermo, on the north coast, this fruit is found only in gardens. Sicily was in ancient times the granary of Rome, and still possesses the same fertile soil, and the same capability of abundant productiveness; but the system of rural and political economy in the island is such, that it sometimes does not produce corn sufficient for the consumption of its own inhabitants. Wild animals are very scarce, and even sheep are almost unknown; hares and rabbits are now almost the only native quadrupeds to be met with, and even the latter are not common; but, to compensate this deficiency, there are vast flocks of water-fowl in the marshes of Leontini and Syracuse, and quails in incredible numbers pass over the island for the northward in spring. Bee-eaters, orioles, rollers, are then common everywhere, and are pursued by numerous hawks and owls. The African flamingo is not uncommon in the marshes of Syracuse, and the pelican is also an occasional visitor. The purple heron, the night heron, the little bittern, the long-legged plover, the glossy ibis, the pratincole, and several other rare European species are also among the common migratory visitors. Insects are numerous; and flights of locusts have occasionally afflicted the island. The most destructive invasion of these insects appears to have happened in the beginning of last century, when they spread devastation and ruin over the island during a period of five years. The Sicilians partake of the general character of their Neapolitan neighbours, profess the same religion, with the concomitant characteristics of ignorance and superstition, and are subject to the same ruling power. The despotic character of the government, together with the exorbitant feudal privileges of the grandees, have reduced the body of the people to the lowest state of penury; while the want of roads, or the badness of those that exist, prevents much internal communication or trade. Sicily, however, produces some wines that are esteemed by foreigners; the raw silk of the island is also fine; and these articles, with olive oil, fruits, sulphur, and salt, afford materials for exportation. In return she receives manufactured goods in great variety, though in small quantities, on account of the prevailing poverty of the people, who cannot afford to purchase anything beyond the coarsest articles of furniture and clothing.

Sicily forms a portion of the kingdom of the Two Sicilies, and possesses, in theory at least, a representative constitutional government, established in 1812; but since 1815, this has fallen into complete abeyance; and the island is now under the uncontrolled sway of the King. For administrative pur-

poses it is divided into valli or intendancies, districts, and communes, corresponding to departments, arrondissements, and communes in France. Each valle is placed under the charge of an intendant with a council. Civil and criminal justice are administered in the king's name by conciliators, judges of circuit and instruction, tribunals of commerce and civil matters, superior courts for civil, criminal, and special adjudication, all of which are amenable to one supreme court. The judges amount to 250; the lowest class of whom, the judges of circuit, have salaries varying from £38 to £80; the highest, those of the supreme court, receive £415 per annum, and the president of the latter £615. The property of the island was valued in 1811, when the British garrison and fleet created a great demand and high prices for the produce of the country, and that valuation has been continued as the basis on which the land and house-tax is levied. On this valuation a tax of 7½ per cent was first raised; it was afterwards increased to 12½; and now amounts, taking together the former and the present value of produce, to 21, and in some cases to 60 per cent. of the produce. The nett annual revenue amounts to about £1,000,000 sterling; of which one half is transmitted to Naples. About £370 are professedly expended in improvements; the remainder is appropriated to the officers of government, and to the maintenance of criminal prisons. There is no country which is so highly taxed; nor is there one which derives less benefit from its government. Primary and secondary schools figure in every commune; colleges and academies are established in twenty-one towns, and in the two universities of Palermo and Catania, are 81 professors, and about 1250 students. There are besides Jesuit schools, three episcopal academies for divinity students, and boarding schools at Palermo for the gentry. Females belonging to families of distinction are educated in convents; but with all these means, the people, from the highest to the lowest, are, with few exceptions, remarkably ignorant. There are several libraries and museums of natural history at Palermo and Messina, with hospitals and other institutions for the relief of the sick, and lodging the insane. But, of all the public establishments, the prisons seem especially to claim the attention of the government, not, however, with the view of promoting the comfort of the prisoners, but their security. The state and criminal prison on the island of Marittimo contains, perhaps, the strongest and most hideous dungeons in the world, to which the prisoners are lowered several hundred feet from the rocky height above, and are seldom, if ever, heard of afterwards. The island contains three archbishops, and ten bishops; with priests in every commune. The church is chiefly maintained by revenues from landed estates; but the priests are paid by the communes. There are 660 monasteries, belonging to twenty-one or twenty-two orders; and the number of monks has been stated to amount to from 12,000 to 15,000.

Agriculture, pasturage, fisheries, the sulphur mines, and a few manufactures, form the principal occupations of the people. The land is chiefly belong to the nobility; but, as estates are now divided by law among the children, instead of going, as formerly, to the eldest son, the princely incomes formerly enjoyed by some of the nobles have dwindled away to a third or a fourth; and, in the course of time, their estates will be frittered down to very small possessions. Owing to the oppressive amount of the land-tax, many fertile tracts remain uncultivated. Sicily is the only European country where we find numerous modern ruins, consisting of whole towns, which have ceased to be inhabited within the last century. The distribution of the land is estimated thus: — Cultivated as arable, or corn lands, 3,125,000 acres; vineyards, 115,000; vegetable and fruit gardens, 260,000; woods and olive plantations, 1,125,000; entirely waste, though nearly all fertile, 1,265,000; pastures, fertile, but chiefly waste, 1,125,000; total, 5,163,000 acres. Over the whole island the art and implements of agriculture, and the dwellings of the people, are in the most wretched condition. Indeed, were it not for the fruit of the Indian fig, which grows wild and in abundance, the agricultural produce of Sicily, once the granary of Rome, would not probably maintain two-thirds of its diminished population. It produces, however, good crops of wheat, barley, beans, tobacco, cotton, hemp, flax, &c., with scarcely more cultivation than scratching the surface of the ground to admit the seed. With few exceptions, the horses, mules and asses are small and ill made; the Tunisian or reddish brown breed of cattle are large, strong, finely formed, and have generally long horns; the native or black breed are much smaller. There are many large and fine flocks of merino sheep; but the native breed is small and yields coarse wool. The goats are a tolerably good breed, and their hair is made into cloth. The swine are of a very inferior description. With the exception of the vine, a great deterioration appears to have taken place in the cultivation of fruit; the best olive trees are those which were planted many centuries ago by the Saracens. The oranges and citrons are delicious, and are collected with more than usual care. The forests have nearly disappeared; the woody region of Etna, and the woods of Caronia, on the northern mountains, consist chiefly of various kinds of large oak, elm, firs, and ash. Staves for wine casks and ship timber are imported; for, so far from being able to export any wood, great difficulty is now felt in procuring even fuel for cooking. Of the vines the black grape is the most general and abundant, though it is often planted promiscuously with the white. Except on the high grounds, the vintage usually begins in the latter half of September. The wines of Marsala, Mazzara, and the adjoining districts, are those chiefly exported. This wine is produced from a mixture of white and black grapes, to the amount annually of 30,000 pipes, of which from 18 to 20,000 are exported. Along the north coast, the slopes of the mountains and the valleys are almost entirely covered with olive trees; but on the south and west coasts, and generally in the interior, olive groves are rare, and do not furnish oil sufficient for the use of the inhabitants. Part of the east coast, north of Catania, produces the olive tree in great perfection; the olives are gathered in low situations in October; and in higher places, from October to January. Sicily produces silk in small quantities, to the extent of only about 400,000 lbs. a-year; the greater part of which is manufactured into ordinary silk stuffs at Catania. Cotton is cultivated in small patches, but very negligently; and scarcely enters into the exports. Dye stuffs, barilla, honey, liquorice, and many other articles might be cultivated to a great and profitable extent; but these are all totally neglected.

The principal mineral production is sulphur, the mines of which extend over a great part of the centre, and down to the south coast of the island. The mineral is imbedded in blue marl, but is occasionally found also in gypsum and limestone. The mines have been known and wrought for more than three centuries; but the quantity dug and prepared for exportation was unimportant, until within the last fifteen years, when the discoveries in chemistry caused an extraordinary quantity to be successfully applied to manufacturing purposes. British capital and industry were applied to its production; about 300 ships, of from 150 to 350 tons, were annually employed in the trade between Great Britain and Sicily; the capital, profit, and wages so employed amounted annually to at least £2 000,000 sterling, besides the large sums invested in buildings and the machinery necessary for working the mines. This rapidly prosperous state of things excited the cupidity of certain interested persons, who persuaded the king to grant them a monopoly of the sulphur trade, on the ostensible ground of protecting the proprietors of the mines from the bad effects of over-production. For this they were to pay to his Majesty an annual premium of 400,000 ducats; but the effect of the monopoly was almost immediately to reduce the trade to its former insignificance, to the great loss and injury of those who had embarked their capital in it. The king, however, has been recently obliged, by the threats of the British government, to recal the monopoly, and restore the trade to its former footing.

The fishery of Palermo employs from 600 to 1000 boats, with 3500 fishermen, and the produce is valued at from £20,000 to £24,000 a-year. There are twenty-two tunny fisheries, of which six are at Palermo, seven at Trapani, four at Melazzo, and five at Syracuse; each fishery employs about fifteen boats. The sword fishery is confined chiefly to the straits of Messina, and the produce is consumed

on the island. The anchovy and sardine fishery is carried on at Siculiana, where it is begun after Easter, by the fishermen of Palermo, Termini, and Cefalu, who cure and pack up the fish for exportation. The coral fishery is chiefly followed by the Trapanese, who go for the purpose to Bona in Africa; the coral is polished and worked at Trapani, and sent to Catania, Naples, Leghorn, and other places. Before 1816 the foreign trade of Sicily was chiefly in the hands of the Genoese, the Ragusans, and the French; the Sicilian vessels being then chiefly limited to the coasting trade, from the fear of being taken by the Barbary corsairs. There belong at present to the several ports of Sicily about 2250 vessels of all kinds, measuring about 43,000 tons, and employing about 25,000 men and boys. — (*Report of the Commercial Statistics of the Kingdom of the Two Sicilies, by J. Macgregor; presented to Parliament, August* 1840.)

Sicily is divided into seven valli, or intendancies, as stated in the following table:—

Intendancies.	*Cities and Towns.*
Palermo, ...	PALERMO, Monreale, Corleone, Termini, Cefalu, Bisacquino.
Messina, ...	MESSINA, Milazzo, Patti, Mistretta, Randazzo, Taormina, Castroreale, Lipari.
Catania, ...	CATANIA, Aci Reale, Mascali, Paterno, Bronte, Nicosia, Caltigirone.
Siragosa, ...	SIRAGOSA (*Syracuse*), Agosta, Noto, Spaccaforno, Ispica, Modica, Scicli, Ragusa, Comiso. The islet Marzamene.
Caltanisetta, . . .	CALTANISETTA, Leonforte, Mazzarino, Terranova, Piazza, Castro Giovanni, Pietra-Perzia.
Girgenti, ...	GIRGENTI, Aragona, Palma, Naro, Mussomeli, Sciacca, Sambucca, Alicata, Cannigati, Catolica, Bivona. The islands Pantellaria, Linosa, and Lampedosa.
Trapani, ...	TRAPANI, Monte Giuliano, Castelamare, Alcamo, Calatafimi, Salemi, Castel Vetrano, Mazzara, Marsala. The islands of Favignana, Maretimo, Levanso, &c.

PALERMO, the capital of Sicily, is a large and fine archiepiscopal city, agreeably situate on the northern coast, in a luxuriantly fertile and well-cultivated plain, named La Conca d'Oro (the golden shell), which is enclosed on three sides by mountains, and opens on the north to a spacious bay. The houses are all flat-topped, and, instead of windows, have balconies with glass doors; the streets are well laid out, and almost all terminate at two of the principal thoroughfares. Several fine public buildings, seven squares, and fine walks, the best of which is the *marina*, lying along the shore, a university, and several other literary establishments, an active commerce, and 130,000 inhabitants, entitle Palermo to rank among the principal cities of Europe. The fete of St. Rosalia attracts every year in July, an immense crowd of people from all parts of the island, and gives a great stimulus to the trade of the city, which is otherwise very considerable. *Monreale*, an archiepiscopal city, west of Palermo, has a royal college, and 18,000 inhabitants. *Corleone* has a royal college and 12,000 inhabitants. *Termini* a fortified seaport town on the coast, east of Palermo, has a royal college, a nautical seminary, and celebrated mineral waters, with a population of about 11,000. *Cefalu*, an episcopal city, with 9000 inhabitants, 40 miles east of Palermo, has a harbour, a school of navigation, considerable fisheries, and trade. In its neighbourhood are some Cyclopean remains.

Messina, a large and fine episcopal city, with an industrious and commercial population of 85,000, possesses the finest harbour in the kingdom, and one of the best in Europe, and occupies a delightful situation on the west side of the strait to which it gives its name. The city has been rebuilt since 1783, when it was almost entirely destroyed by an earthquake. It has a citadel, and is otherwise strongly fortified; and its environs are the most densely inhabited, and the best cultivated part of the island. The exports are oil, currants, raisins, wine, almonds, lemons, sumach, and other produce of the island. *Taormina*, 30 miles south of Messina, a small town, in a beautiful situation on the coast, contains a Roman theatre, cut in the rock, a naumachia, a cistern, and an aqueduct; it maintained against the Saracens a siege of 80 years' endurance. *Catania*, a large archiepiscopal city, with wide and straight streets, and a good harbour on the eastern coast, stands at the foot of Mount Etna. It has suffered severely from earthquakes, but nevertheless still contains the remains of an amphitheatre, larger than the Colosseum at Rome, and other Roman antiquities. It contains a university, a lyceum, a public library, a museum, and other literary establishments. The silk stuffs of Catania rival the best in the kingdom; the population amounts to about 40,000. *Aci Reale*, N.E. of Catania, a clean and well-built town, stands on streams of lava, and contains 14,000 inhabitants. *Bronte* gave the title of Duke to the celebrated Lord Nelson, but his estate, to which the title was attached, has been, since his death, completely destroyed by the eruptions of Etna, at whose base it is situate. *Siragosa*, a fortified episcopal city on the east coast, with 14,000 inhabitants, a large natural harbour, a royal college, two seminaries, a library, and a museum, stands amidst the ruins of the ancient *Syracusa*, which cover a space of 20 miles in circumference, and of whose five magnificent and populous districts, the small island of Ortygia is the only one now inhabited. Its harbour, formerly one of the finest in the Mediterranean, was long believed to be so choked with sand as only to admit chebecks or brigantines, till Lord Nelson proved the contrary, in 1798, by sailing right into it with his ships of war and frigates, and finding excellent anchorage. The celebrated fountain of Arethusa which flows through the town in a stream 4 feet deep, has become turbid and muddy, and is now used for washing the clothes of the citizens. *Agosta*, the ancient *Augusta*, to the north of Syracuse, is a small fortified city, in a delightful situation, with a harbour, and 10,000 inhabitants. *Noto*, a finely situate and well-built city, with 13,000 inhabitants, four miles from the shore, and 17 miles S.W. of Syracuse. *Caltanisetta*, a large well-built inland town, with 16,000 inhabitants, 60 miles S.W. of Palermo.

Girgenti, an irregularly-built episcopal city, on the south-west coast, is situate on a hill, 1100 feet above the sea, not far from the shore, where it has a harbour. It has some fortifications, and about 15,000 inhabitants. In its neighbourhood, at Girgenti Vecchio, are the remains of *Agrigentum*, consisting of the Temple of Concord almost entire, the Temple of Juno, and the ruins of the Temples of Ceres, Proserpine, Hercules, Apollo, Diana, Castor and Pollux, Esculapius, and the Olympian Jupiter, the last of which was never finished, but was constructed with enormous columns 120 feet high. The pier of the harbour of Girgenti has been built from the ruins of these magnificent temples. *Aragona*, a small town with 6000 inhabitants, 6 miles N.E. of Girgenti, is noted for its picture gallery, its antiquities, and the singular mud volcano of *Macaluba* or *Mocaluba*, in its neighbourhood. Here, on a level surface, are numbers of scarcely perceptible openings, from which at regular intervals, and with a hissing sound, little explosions of gas burst; while, at the same time, a white and very delicate marly slime wells out, and flows in a sluggish stream. *Castro Giovanni*, a large town, with 11,000 inhabitants, and a royal college, is situate on a high mountain, almost in the middle of Sicily, in the locality of the ancient *Enna*, so noted for the rape of Proserpine, and for the magnificent temple of Ceres, who was worshipped there. *Sciacca*, 32 miles W. of Girgenti, a little seaport town, is built on a green hill, amidst a profusion of cactus; off which, at the distance of about 20 miles, a volcanic mount rose from the sea to a considerable height in 1833, and soon afterwards disappeared, leaving only a bank in its place.

Trapani, a busy commercial fortified town, with a royal college, a tribunal of commerce, and 24,000 inhabitants, built on a peninsula, at the western extremity of Sicily. Its inhabitants are largely engaged in fishing coral, part of which is carved into necklaces, and exported even to India, by way of

Alexandria. The Trapanese are also expert carvers in ivory, alabaster, amber, mother-of-pearl, &c. *Marsala*, a large seaport town, about 20 miles S. by W. of Trapani, has a royal college, and 21,000 inhabitants. Its harbour is encumbered by sand, but its celebrated wines furnish an important article of export. There are here six wine establishments, four British, and two Sicilian; three of the British are on a large scale, and have from 8000 to 20,000 pipes in annual deposit; the fourth, recently established, only requires time to be equally extensive. The wines have only come into repute since 1802, when they were introduced by Nelson, for the use of the British fleet. *Castel Vetrano*, 25 miles S.S.E. of Trapani, with 13,000 inhabitants, is noted for its coral articles, its alabaster works, and particularly for its vicinity to the remains of the ancient *Selinus*, where are still to be seen enormous heaps of ruins, which the people of the country call the pilleri de Giganti (Giant's pillars.) In the midst of a pile of ruins resembling massive rocks, rise several gigantic columns, of the same style of Doric architecture as those of Segesta and Girgenti; while many others lie in confusion on the ground. *Alcamo*, an archiepiscopal city, with a royal college, and 18,000 inhabitants, 25 miles west of Palermo. In the neighbourhood is the site of the ancient *Ægesta*, called also *Egesta*, *Acesa*, and *Segesta*, where is a temple in very good preservation; but everything else is reduced to a mass of shapeless stones and rubbish. *Mazzara*, a small city, with narrow, ill-paved, and dirty streets, surrounded by a Saracenic wall, on the south-west coast, has a considerable trade in exporting grain, pulse, cotton, wine, fish, fruit, barilla, madder, oil, and soap.

Malta, Gozo, Comino.

This group of islands is situate in the Mediterranean sea, between 35° 45′ and 36° 6′ north lat., and 14° 9′ and 14° 35′ east long., about 63 miles S.W. of Cape Passaro in Sicily, and extends in a line from north-west to south-east, a length of 28 miles, divided by two straits which are separated by Comino, the central island. Malta, the largest, is of an irregular oval figure, about 16 miles in length by 8 or 9 in breadth, and is composed of calcareous rocks, which slope like an inclined plane from the level of the sea towards the south and east, where they attain the elevation of nearly 200 yards. The surface is composed of small valleys, defiles, and hills, which extend across the breadth of the island. In most places the rock is entirely naked, except where the hand of industry has placed over it a layer of travelled earth, brought originally from Sicily and other places. Gozo, the most northerly, is more elevated than Malta, and is entirely surrounded with perpendicular rocks, the highest of which are to the west and south, where they are very steep. The surface is not so uneven as that of Malta, and is consequently more easily cultivated; the pasture land is good, and great numbers of cattle are fed on it for the use of Malta. The grapes of Gozo are peculiarly fine, and are highly esteemed by the Maltese. Cotton and grain are cultivated with success; the air is particularly salubrious, and the country presents many agreeable prospects. Comino is a small island, two miles in length, between Malta and Gozo, and partakes most of the character of the latter. The two channels which it forms have from 12 to 20 fathoms water, and are safely passable by the largest ships in mid-channel, in which, too, there is good anchoring ground of fine sand. The greater part of the land in Malta is planted with cotton It also produces wheat, barley, and a grain called tommon, which grows in the poorer soils, sometimes mixed with wheat, and sometimes with rye. Both Malta and Gozo produce fruit of exquisite flavour, with excellent roots and very fine odoriferous flowers; cummin, aniseed, laricella, and a lichen which grows on the rocks exposed to the north, and is used for dying an amaranthine colour. Gardens are numerous in Malta, especially towards the east, which are generally ornamented with orange and lemon trees; the greatest attention is paid to them, and they are commonly watered twice a-day from cisterns hewn in the rock, with trenches dug round about to collect the rain. Bees are kept in great numbers; the honey is delicious, and remains always liquid. There are numerous asses of a strong breed; the sheep are very prolific, and exceed 12,000 in number. About six or seven thousand beeves are also maintained, and five or six thousand horses of all kinds. But, besides the food produced from the soil, there are several hundred boats employed in the fisheries, for the daily supply of the markets. In August and September a fish is caught resembling the dolphin, which is called at Malta the lampoukeag. The climate is delightful; the four seasons are regularly defined, and the country is remarkably salubrious. The Maltese are a mixed race, principally Italian and Arabic. Their language is, like themselves, an Italiano-Arabic dialect, intelligible to the natives of the opposite shore of Africa; but pure Italian is used by the mercantile and higher classes, and English, which is the language of government, is generally understood in some degree by the natives. The Maltese are a robust, active, and temperate people; but, from want of employment, are still very poor, wasting their energies in idleness. Their condition has, however, been greatly improved since they became British subjects, by the opening up of new sources of industry, and some of them have become the best sailors in the Mediterranean. They are bigoted catholics, and very superstitious and fanatical; but education is spreading, and will by and by modify their character. The population of Malta in 1836 amounted to 106,614, being 1122 24-95ths to the square mile; that of Gozo to 16,534, being 612 10-27ths to the square mile. The total value of imports in that year amounted to £685,531, and of exports, £307,942. The shipping inwards, 1,963 vessels, with a burden of 199,500 tons; outwards, 2083 vessels, burden, 216,267 tons. The capital of the islands is *Civita Valetta*, on the north-east coast, built upon a tongue of land extending into a bay, so as to form a splendid harbour on each side, where also the projecting points are occupied by towns and forts; the city itself and the suburbs being surrounded by impregnable fortifications, parts of which are cut out of the solid rock. The streets of Valetta are narrow and steep; but it contains some splendid buildings, which still attest the magnificence and the devotion of its former masters, the Knights of St. John, to whom the island was gifted by the Emperor Charles V. after they had lost Rhodes, and was possessed by them till 1798, when they were dispossessed by the French. Valetta surrendered to the British in 1800, after a two years' blockade, and was confirmed to Britain by the peace of 1815. The *Civita Vecchia*, or old town, is situate nearly in the centre of the island, and is called by the natives *Medina* (i. e. the city); it is an episcopal see, and contains a large cathedral, besides several other churches. It stands on so high ground, that in a clear day the whole islands, and the coasts of Sicily and Africa, may be seen, both at the distance of about sixty miles. The catacombs are very extensive, and of great celebrity. The island contains besides, twenty-two casals or villages. Near the western part of the north coast is the *Calle de San Paulo*, or haven where St. Paul is said to have landed after his shipwreck; though some critics consider the island of Meleda on the Dalmatian coast, to be that on which the Apostle was cast. Gozo contains six casals or villages, two castles, and a fortress on a rock of 300 yards in diameter, in the interior of the island.

TURKEY IN EUROPE.

ASTRONOMICAL POSITION.—Between 39° and 48° 15′ N. latitude, and 16° and 30° E. longitude.

DIMENSIONS.—Turkey, in its present restricted limits, exclusive of Greece and the adjacent Islands, but embracing the tributary principalities of Moldavia, Wallachia, and Servia, extends from E. to W. in its greatest length about 700 miles, from the western border of Croatia to the Channel of Constantinople, or the mouths of the Danube; and from N. to S. in its greatest breadth, about 650 miles, from the northern frontier of Greece to the N. E. frontier of Moldavia, including an area of nearly 180,000 square English miles.

BOUNDARIES.—*Northern*:—The Military Borders of Croatia, Sclavonia, Hungary, Transylvania, the Buckowine, and Bessarabia. *Southern*:—The Archipelago, and the northern frontier of the Kingdom of Greece. *Eastern*:—The Black Sea, Channel of Constantinople, Sea of Marmora, and the Dardanelles. *Western*:—The Ionian Sea, Channel of Otranto, Adriatic, and the Austrian provinces of Dalmatia and Croatia.

GENERAL ASPECT.—The greater part of Turkey is occupied by a series of lofty mountain ranges, which form and inclose high valleys and table lands, leaving only in some places a narrow border of lowland along the sea coasts. Such is its general character between the Danube and the frontier of Greece; but to the north of the great river, the country sinks into a plain which stretches north-eastward to the frontiers of Russia and the Carpathians, and includes the principalities of Wallachia and Moldavia. According to Dr. Boué, even the best maps are erroneous and defective; containing not only false names, but wrong places, and erroneous positions. Hills, and even large rivers, are entirely omitted; while the hills marked in many parts are merely imaginary representations. All maps exhibit a great central chain, extending from the north-west, in an easterly direction to the Black Sea, supposed to be a continuation of the Alps, or, at least, to be connected with them by the hilly region at the north-eastern corner of the Gulf of Venice. But, in reality, the Balkans, from Sophia to the Black Sea, are only a range of moderate heights; the central part of the chain may be crossed anywhere in a day, and in some places even in a few hours. Indeed, the site of these pretended lofty mountains is, in some places, occupied by molasse hills.

GEOLOGY.—The central nucleus of Turkey consists of a high undulating country or plateau, extending from east to west between Sophia and Pristina, and forming the upper part of the basin of the Morava. To the northward of this plateau the limits of Servia are defined from E. to W. by the *Jastrebacz* (chain of the Sparrow-hawks), the *Plocsa*, and the *Kopaonik*. The first chain is covered only with oaks, and higher up with elms, like the hills in middle Servia, but the two latter have fir trees near their summits. The greatest elevation of the chain appears to exceed 5500 feet. The Jastrebacz is a mass of crystalline slaty rocks, the others consist of transition slates, with syenite, diallage rock, serpentine and metalliferous deposits. Southward of the plateau is a pretty large group of hills, named the *Kurbetska-planina*, probably the *Orbelus* of the ancients, which have an absolute elevation of between 4000 and 5000 feet. To the west and east of this group are low chains clothed with oaks, and forming the northern frontier of Macedonia from Uskub to Dubnicza and Sophia. These hills are chiefly composed of talcose or micaceous slates, and scarcely reach an elevation of more than 3000 feet; they are still lower in some places to the west of Kostendil (Ghiustendil), where they partly consist of transition limestone, and even of tertiary molasse. The Orbelus itself is a massive mountain of granitic rocks blendid with gneiss; and in its vicinity are found trachytes, which are connected with those of Karatova. Trachyte also extends along the low central chain, from Strazin in Macedonia to the vicinity of Vranja, south of the Morava. A sulphureous hot spring issues forth at the northern extremity of these hills.

On the eastern border of the central plateau, south of Nizza, are situate the lofty *Stari-planina* (Old Mountain), and *Suro-planina* (Dry Mountain), limestone ridges, occurring next to the mica slates of Baditschka-Gora. A very extensive group of mica slate and talc-slate hills rises more to the south, between the Morava valley and those of Irn and Sukova. On the north-eastern base of this group are found trachytes and trachyte conglomerates; but on the very steep southern declivity porphyry dykes occur in the slates; while the tops of some of the hills are composed of trachyte, and a white trachyte aggregate. Here, as in the Servian hills, elms cover the low flats, oaks the sides, and pasturage the summits, the chief of which is the broad *Snegpol* (Snowfield.) The last mountain is a little higher than the Stari-planina, and attains an elevation of nearly 4350 feet. The Snegpol is united by the ridges above the village of Klisura (defile) to the *Kurbetska-planina*, and the hills of *Egri-palanka*. The talc slates of which these ridges are formed, are often decomposed, and contain microscopic crystals of magnetic iron ore, which is washed and smelted in many places. These hills completely separate the upper valley of the Morava from that of Irn, whose stream flows into the Sukova and Nissava. To the south-east of this group are lower ridges composed of limestone and newer transition slate, or Silurian rocks, with numerous defiles or rents running nearly N.-S. These hills extend to the great valley which leads from Nizza to Sophia, and which is excavated, particularly towards the east, in a conchiferous limestone, probably belonging to the Jura formation. All the above-mentioned chains are inhabited by a pretty dense population of industrious Bulgarians.

To the west of the central plateau lies the *Pristina*, or *Kostova Plain*, surrounded by low hills, which rise only 800 or 1000 feet above it, whilst its own absolute height is 1400 feet. The hills are chiefly composed of talc or mica slate, with some serpentines and amygdaloidal limestones; and are covered with forests, chiefly of oak. The central plateau itself is occupied by hills a little higher than those last mentioned, and contains valleys or basins formed by the rivers Morava and Toplitza, and their defiles. The valleys are covered with villages, and cultivation extends far up among the hills. The Morava valley is composed of tertiary beds of an argillaceous or sandy nature, as near Nizza and Laskovacz: alluvial beds occur higher up in the Vranja basin. Some trachytic eruptions have taken place to the south-east of Laskovacz, and siliceous limestone, probably of fresh water origin, occurs to the north-east, near Sheshiné, at the foot of the hills to the east of the Morava. Between Radomir (at an elevation of 1614 feet, on the eastern side of the Strymon), Bresnick, and Sophia, is a long plateau, nine miles broad, and composed of tertiary augite porphyry. To the south rises the mountain *Wistoska*, or *Wistosh*, with its limestones, slaty and granitic rocks, argentiferous ores, and abundant springs; its height may be estimated to exceed 4000 feet. To the west it overtops the bare hilly country round Radomir, and to the east the beautiful plain of Sophia, which has an elevation of only 1348 feet.

The ranges to the south of the central plateau are united geographically to the *Despoto-dagh* or *Rhodopé*, and *Balkan* or *Hæmus*, by means of the Wistoska, together with some granitic and syenitic hills, at the base of the Rhodopé, and three or four low ridges running obliquely from Barja to Ichtiman. These last are composed of mica slate, gneiss, and granite, with some granular limestones, and have an elevation from 2000 to 2356 feet. At the base of the Despoto-dagh they are crossed by the *Kix-derbend* (Girl's defile), running W.-E., and composed at its narrowest part of granular limestone. The road from Tartar Basardschik to Barja is carried along it; but this must not be confounded with another defile of the same name to the south-west, between Rasluk and Neurokop. The passage of this deep defile occupies nine hours, and all around it appears a chaos. At Somakov the alluvial soil is full of microscopic particles of magnetic iron ore; for the smelting of which there are several foundries, and the Pasha of Sophia has built one after an English plan. The *Despoto-dagh* or *Rhodopé* does not extend to the Dardanelles, as all maps indicate; its highest summits are situate towards the west, to the south of Barja, Samakov, and Dubnicza, and reach an elevation of 8000 feet, or probably still higher. There it is called by the Servians *Rilo-planina*, and by the Turks *Rilo-dagh*; towards the east it takes the names of its great valleys. The chain gradually diminishes in height from west to east, and terminates rather abruptly about five leagues from the Maritza, and six leagues S.W. of Adrianople. The declivities on the northern side are generally steep. Pine trees occur highest up among the hills, next to them are elms, and lower down oak forests. A number of rents running N.-S., form deep valleys, adorned with monasteries, villages, and cottages, and serving as the passes by which the chain is crossed. The chain is composed of crystalline slates, gneiss, granite, and granular limestone, of which some isolated portions are also found in the northern tertiary basin; and at Philippopoli sienite forms four small hillocks in the town, or close to it. From the Archipelago to beyond Kara-bunar (south of Dimotika), is a long stripe, running S.-N., of trachyte and trachyte conglomerate. On the northern base of the Rhodopé hornblendic trachytes are found in some parts of the Semidsche valley; the trachytic country is partly a stony barren soil, and partly covered with low trees of the pallurus aculeatus. It is fertile only where the conglomerates are in connexion with the tertiary argillaceous-calcareous beds. South of Adrianople, between the Maritza and the Dardanelles, are the low ridges and plateaux of the *Tekir-dagh*, in which molasse is associated with clay, and a sand which occasionally contains shells, with numerous fragments of scilicified coniferous wood. Coralline and shelly limestones are found on the sands of Malgara, and particularly on the western banks of the Maritza, near the trachytic zone round Fered. The greatest elevation of the Tekir-dagh may be nearly 900 feet. To the south-east of Aimadtschik, is a somewhat higher ridge, which, near the Sea of Marmora, is probably 300 or 400 feet higher than the Tekir.

The *Balkan* or *Hæmus* extends from Sophia to Emineh-burun, on the Black Sea; the western part being called *Veliki-balkan* (or Great Range), and the eastern *Malo-balkan* (or Little Range.) It is a much lower chain than the Despoto-dagh; the southern slopes are generally very steep; but on the northern side it is only the highest ridge which is much inclined. The Balkan is almost destitute of subordinate chains towards the south, and is composed of the principal high ridge, and a series of parallel low ranges, which diminish in height towards the Danube. Among these are long valleys extending east and west, and occasionally rents intersect the ridges from north to south, and are occupied, as in the Alps, by the great rivers which issue from the long valleys. The western portion of the chain, *Kodja-Balkan*, at the source of the Osma, probably reaches an elevation of more than 4000 feet; but near the sea the summits are only from 1800 to 2000 feet above its level. There is an oblique and pretty high ridge to the west of Czatac and Bashkoe, which separates the waters of the Bebrova from those of the Akali-Komtschik. The high Balkan is composed of crystalline slaty rocks, gneiss, mica-slate, talc, and clay slate. Above Islivné (*Selimno* of maps), near the middle of the Balkan, are some very picturesque hills of quartziferous porphyry; and among these the peaks of the *Tschatal-dagh* (rent hill), rise to the height of 2800 feet, and afford a most beautiful view of Roumelia. Immediately above these older rocks of the Balkan is a thick formation of green sand, composed of marly greyish sandstone, quartzose and greenish-coloured sandstones, and beds of marly clay, and whitish, greyish, or black compact limestone, which forms thick beds, and occasionally craggy precipices; but the other rocks, except the green sandstones, form only hills, which are generally either covered with oaks and elms, or, being destitute of trees, are used as pasture grounds. At the east end of the Balkan the green sand is covered with extensive plateaux of chalk, with flints and belemnites. Between the Balkan and the Danube, Bulgaria is covered by a great tertiary formation, which becomes broader as we proceed from east to west. The Danube flows past a series of small hills on the Bulgarian side; but on the northern or Wallachian side, the country is flat. The isthmus between Rassova and Kostendsche, on the Black Sea, is occupied by alluvial matter, and some low tertiary hills; and the Danube can never have had its channel there in historical times. South of the Balkan there exists only one subordinate chain, at some distance, consisting of low hills of transition slate and limestone, extending between Kalofer (Caloper), Eski-Sagra, and a place west of Islivné, where the Tondja issues through a defile from its upper alluvial basin. This basin is the plain which extends between Tschipka, Kezanlik, and Czirkua, and it is on it that roses are cultivated for making attar.

From Islivné to Burgas, on the Black Sea, there is an extensive hollow at the base of the Balkan. The remainder of the chain bounds the vast tertiary gulf whose surface forms the present soil of a great part of eastern Roumelia or Thrace. The southern base is remarkable for the exuberance of its vegetation, consisting of gardens of roses, jasmine, and wild lilac, vineyards and forests of all kinds of fruit trees, but without the olive-tree, the anis, or the lepleb. The adjacent plain, however, is destitute of trees, and consists chiefly of fields under cultivation, and pasture grounds, which are partly marshy, with a black soil. This alluvial and tertiary plain extends to the chain which runs along the Black Sea, the Sea of Marmora, and the Archipelago. In the plain north of Adrianople small groups of isolated hills composed of trachyte are occasionally met with; and in the north-eastern portion of the basin is a very extensive undulating plateau formed of augite pophyry, and extending from the foot of the Balkan, north of Aidos, to the gulf of Burgas and Karabunar on the Curu. In

the wild and wooded country between Aidos and Burgas is a hot sulphureous spring. The chain which extends along the south-western shore of the Black Sea is not in immediate connection with the Balkan; but, speaking geographically, is only a continuation of the chain at Eski Sagra. On approaching the Bosphorus the shore chain is divided into a number of small hills which rise on low-lying plateaux. Near Seral are clay slates, which extend to the Bosphorus, and alternate with grey-wacké and silurian shell limestone. To the north of Buyukdereh is a small trachytic district.

To the west of the central plateau of Mœsia is Upper Albania, a country occupied to the east and south-east by the lofty *Tschar*, and to the south by its prolongation, consisting of the high ridges interposed between the wild primary valley of the Debres and the plain of Bitoglia and Perlepe, with the valley of Kalkandel, called Tetovo in the Bulgarian tongue. They are in some places more than 8000 feet high, and occasionally capped with snow during summer. The ridges consist of immense masses of crystalline slates, which, in the Tschar, become talcose or argillaceous, and contain whole hills of compact or semigranular limestone. To the west of these ridges, and rising to the average height of 6000 or 7000 feet, are the primary mountains of *Elbessan*, through which passes the only military road from Roumelia or Monastir to Skutari. It is carried through Ochri, where the vineyards indicate that the elevation of the lake of Ochrida is under 2000 feet. Further south extends the primary *Pindus*, with parallel limestone ridges like those of the Tschar. To the north of these chains there have been immense eruptions of diorite, compact euphotide, and serpentine; and among these are found all the compact, lamellar, syenitic, decomposed, and earthy varieties of the ophite of the Pyrenees. Diallage rock occurs rarely, but forms some magnificent masses and small hills in this deposit round the torrent of Rapé, 30 miles east of Skutari. These dioritic hills are connected geographically with the high calcareous ridges of the lower Drin, which are only the extremities of the very high similar chains between Ipek or Scherkoles and the country of Montenegro. Their greyish white summits covered with eternal snow, except towards the east, and their numerous rents, recall to mind the secondary calcareous chains of the Alps. Around the lake of Plava, near Gusinio, above Plava, and a little to the eastward, their elevation probably exceeds 8000 feet. Their lower declivities are covered with villages; for the Albanians, like the inhabitants of Montenegro, seek liberty and exemption from taxes in the wildest abodes. These serrated ridges are connected with the *Kom* and *Dormitor*, two high chains to the east and west of Drobniak, and also with the *Lubitschnia*; all of which are limestone hills capped with snow. Further north, these chains are united to those east of *Glubigne*, between Mostar and Novaschin in Herzegowina. The cretaceous formation occurs in the upper tertiary basin of the White Drin. The inferior chalk is found on the coasts of Albania, where it occurs in the form of singularly-shaped hills of limestone. It is also distributed over Dalmatia and part of Herzegowina, forms numerous high hills round the bay of Cattaro, and extends to Montenegro, where its rocks are so numerous as materially to impede the cultivation of the country. The cretaceous system forms all the hills round Skutari, the lake of which contains some rocky islands of limestone. To the east of Alesio the same limestone forms conical hills, which, more to the south, extend, east of Durazzo, to Berat. The *Acroceraunian* or *Chimærian* chain belongs to the same formation, which probably crosses over to the Ionian islands, and stretches along the coast to Prevesa. These mountains exhibit frequent examples of natural fires; and large springs, issuing like rivers from the rock, are found as in the older limestone districts. Pindus, in its progress southward, sends off several divergent branches eastward, two of which inclose the plain of Thessaly, terminating at the Channel of Trikiri, where they are separated by the gulf of Volo. They contain several very lofty summits. (See *anté*, p. 152.)

Bosnia is an extensive plateau, inclined from south to north, and presenting to the Albanian plain of Ipek and the hills of Myrdita a limestone wall from 6000 to 7000 feet high. To the west it is bounded in a similar manner by the snowy chain, east of Mostar and the *Kom*, west of Kolaschin and east of Drobniak. Towards Servia, the plateau also descends very abruptly, especially to the north-east. In the highest and most southerly part of the plateau are many miles of level ground; but the rest of the country is furrowed by ridges of hills, which diminish in height towards the north, and running S.E.-N.W., so as to form a slightly inclined plane as far as the Save. Bosnia is entirely composed of the transition formation, particularly of the older and medial divisions, intersected here and there by igneous rocks. It produces in some places gold and silver; and rich iron mines are found at Maidan and other places. The chief foundries are at Bosna Seral. Bosnia is a cold country, and its hills are covered with firs, pine-trees, and birches. The plants chiefly cultivated are barley, oats, rye, potatoes, hemp, flax, and plum-trees for making brandy. It is only connected with Turkey by the broken part of its high walls above Novibazar and Ipek, and with Skutari and Maritime Albania by high mountain passes, rendered dangerous by snow and precipices.—(*Dr. A. Boué. Edin. New Phil. Journal, XXV.* 174.)

GULFS, BAYS, STRAITS.—The BLACK SEA (*Kara-dengis* of the Turks, *Tcheriago-moré* of the Russians, *Pontus Euxinus*, or simply *Pontus*, of the Latins), is situate between 40° 50′ and 46° 45′ N. lat., and 27° 25′, and 40° 48′ E. long., being bounded on the N.W. and N. by the Russian governments of Bessarabia, Kherson, and Taurida; on the N.E. by the Caucasian countries of Circassia, Abkhassia, and Mingrelia; on the E. and S.E. by Imeritia, Grusia, and Armenia; S. by Asia-minor; W. by Roumelia and Bulgaria. Its extreme length, E.-W., is about 690 miles, and its greatest breadth, N.-S. 380; but its width is variable; the superficial area is about 160,000 square miles, and the extent of its coasts exceeds 2000. It is very compact in form, giving off few or no large branches, though small bays and harbours occur at short distances all round. The depth is variable; but the variations appear to be very regular: at the entrance of the Thracian Bosphorus, 48 fathoms are found; an equal or greater depth is preserved along the west shore, at a little distance from the land, as far as the mouths of the Danube, where it becomes shallower; but in the main sea, between the Bosphorus and the Crimea, no bottom is found with 100, 120, and 160 fathoms. The south coast, from the Bosphorus to Sinub, is deep; and thence to the east coast, it may be navigated by vessels of any size. There are no tides, but the currents are marked, strong, and regular, with a general direction towards the Bosphorus of Thrace, through which the Black Sea pours its surplus waters. The water is by some voyagers said to be only brackish, and this may be the case near the mouths of the rivers; but by others it is said to be only one-seventh part less salt than the Atlantic, and fully one-tenth salter than the Baltic. To account for this saltness, with such a continual supply of fresh water as it receives from numerous large rivers, and so constant an outflow as it sends through the Bosphorus, it has been imagined that an under current from the Archipelago flows upwards through the Straits, and communicates its saltness to the waters of the Euxine. It may, however, be also accounted for by the great abundance of salt which is found in the country, to the north and north-east, and which probably finds its way to the sea. The navigation of this sea is unobstructed; there is deep water almost throughout, with only one small island, near the mouth of the Danube, and two rocks off shore in the Crimea. The smallest gale, however, raises a short and troublesome sea; but it is noway dangerous; storms, which are not more frequent than in other seas, are seldom of long duration; and even in the worst there is no want of sea-room. The largest ships may sail close to the shore; the anchorages are good, and many of its harbours are excellent. The prevailing wind is from the north-east, and as it blows over a great extent of cold and swampy country, it is not only piercingly cold, but is also loaded with moisture, occasioning thick fogs, and in winter storms of snow. Towards the middle of summer, northerly winds generally prevail, and are succeeded very late

in the year by breezes from the south, which again appear in January, February, and March. The climate is subject to great extremes; and the average of temperature is lower than might be supposed from the latitude. The northern gulfs and straits are in some winters frozen hard enough to admit of the passage of troops; and though such extreme severity is not very common, yet navigation is always suspended during winter in the shallow sea of Azov, and most commonly along the northern shores of the Euxine. On the other hand, the summers are usually hot. The sea teems with seals, porpoises, sturgeons, sterlets, dolphins, mackerel, mullet, bream, and other fish, chiefly of the same kind as those caught in the Caspian and the Aral; tunny fish also enter it from the Mediterranean, for the purpose of spawning; there are also turbot, whiting, and roach; and some writers speak of herrings in shoals, which are probably only large sprats; but there are few fisheries along its shores, though, where they do exist, they are very productive. The Black Sea receives the waters of many large rivers, as the Danube, the Dnieper, the Dniester, the Bog, the Don, the Kuban, and the Kizil-Irmak; and its basin occupies about a third part of Europe, with a small portion of south-western Asia.

The *Thracian Bosphorus* (properly *Bosporos*), or *Channel of Constantinople*, forms the only outlet of, and entrance to the Black Sea. It opens, with a narrow channel, only a mile and and a half wide, in the S.W. corner of that sea, and extends, about 20 miles, to the sea of Marmora. Its width varies from less than 3-4ths of a mile to 2¼ miles; it forms in fact the finest river in the world, with a constant current flowing southward. Its banks are high, exhibiting everywhere the most beautiful scenery, and lined with an almost continuous range of towns and villages. The winding of its shores occasions strong eddies and currents, which are sometimes so rapid, that it is scarcely possible for ships to make way by tacking, in their course to the Black Sea, though, in returning, the current will carry them downwards even against the south wind. Northern winds are, however, more frequent than those from the south, and vessels from the Mediterranean are often detained by them for months in the Dardanelles and the Bosphorus, which they may easily pass in a couple of days with a favourable breeze. At its southern extremity the current of the Bosphorus strikes upon the Seraglio point, which divides it into two portions, one of which flows westward into the Golden Horn, or harbour of Constantinople, while the main body of the water flows onward to the Sea of Marmora.

The *Sea of Marmora* (ancient *Propontis*), measures in its greatest length, from Gallipoli to Ismid, about 170 miles, and in its greatest breadth, to the eastward of the 28° meridian, 48. It is indeed but an inland lake, though salt, for it is formed by the waters of the Black Sea which are poured into it through the Bosphorus, and transmitted to the Archipelago by another channel as narrow, the Hellespont or Dardanelles. It has considerable depth. Five miles N.E. of Marmora, it has 133 fathoms of water, and, at the same distance north, no bottom was found with 355. The shores are cultivated and picturesque; those of the Asiatic side are bolder than the European. The navigation is not difficult; it is generally free from danger, and good anchorage may be found along its northern shore and under shelter of the islands. It contains a large peninsula on the south coast, and several large islands, from one of which (*Marmora*, or Marble island) it takes its name.

The *Hellespont*, or *Channel of the Dardanelles*, is a strait 40 miles in length, and varying from 3-4ths of a mile to two miles in width, which connects the Sea of Marmora with the Archipelago. A strong current runs always through it to the south, at the rate of from 2 to 4 miles an hour. The wind also generally sets in the same direction, so that ships are often detained for a long time at the entrance, and find it sometimes very difficult to work up the stream. There are shoals in some places, but deep water is always to be found in some part of the channel. The Asiatic shore presents the most beautiful scenery; the European is generally steep and rugged. Being the only channel to Constantinople and the Black Sea from the south, it is in several places lined with strong fortifications, mounted with heavy guns; but these are commanded by the neighbouring heights, and can only prevent or retard the passage of ships; while the forts or castles themselves may be taken by landing troops with artillery. The Seraskier Pasha, who commands the forts on both sides, has his station at the Sultanieh Kalessi, on the Asiatic shore of the narrowest part of the strait. The general appearance of the channel is that of a large river flowing between banks everywhere pleasant, in some parts wooded, but on the whole far inferior in beauty to those of the Bosphorus.

The *Archipelago* (ancient *Aigaion pelagos, Ægeum mare*, or *Egean Sea*), is a large offset of the Mediterranean, extending northward between Greece and Asia minor about 380 miles, from Crete to the coast of Thrace, and having a width of from 80 to 240 miles. It is studded with islands; from which circumstance its name has come to be used to signify a group of islands in any part of the world. The navigation is rather intricate, and, owing to the currents produced by the numerous islands, and to the varying winds, not seldom dangerous, particularly to small vessels. On the north-west side, the Archipelago forms in Turkey several deep bays, as the *Gulf of Orphano* or *Contessa*; the *Bay of Istillar*; the *Gulf of Agion Oros*, or *Monte Santo*; the *Gulf of Cassandra* or *Hagios Hamas*; the *Gulf of Saloniki*; the *Channel of Trikiri*; and the *Gulf of Volo*.

The *Gulf of Arta* (ancient *Ambracian Gulf*) is a deep inlet of the Ionian Sea, between Albania and Western Greece, in N. lat. 39°, and E. long. 21°. Its extreme length, from east to west, is about 25 miles, and its greatest breadth about 10; but in several places it is narrower. The depth varies from 13 and 14 to 36 fathoms. The southern shore is formed by high land, with bold promontories, which are clothed with fine woods; the northern shore is for the most part low, and has encroached considerably upon the water. The entrance is only 700 yards across, and, outside, is a bar of gravel, coarse sand, and sea weed, with 18 feet water where shallowest. It was at the mouth of this gulf that the battle of Actium was fought, between Cæsar Octavianus and Mark Anthony, B.C. 29, which decided the fate of the Roman empire at that time.—(*Journal R. Geog. Soc.* III. &c.)

The other principal bays and gulfs of the Ionian and Adriatic Seas are: the *Gulf of Kasropo*, between Corfu and Albania; the *Gulf of Aulona*; the *Gulf of Durazzo*; and the *Gulf of Drin*.

CAPES.—*Tuh Bournu, Gulgrad-burun* or *Cape Kalakria, Eminch-burun*, and *Cape Zaitan*, on the Black Sea; *Helles Bournu*, the S. point of the Thracian Chersonese, at the mouth of the Hellespont; *Cape Monte Santo* or *Akon Oros* (ancient *Athos*), *Cape Drepano*, and *Cape Pailouri*, the extremities of three peninsulas on the coast of Macedonia; *Cape Kiswbo, Cape St. Demetrius*, and *Cape St. George*, on the coast of Thessaly; *La Punta*, a narrow tongue of land (the ancient promontory of *Actium*), at the entrance of the Gulf of Arta; *Cape Linguetta*, on the coast of Albania.

ISLANDS.—In the Archipelago:—*Imbro, Samothraki, Thaso, Lemno* or *Stalimené*, between the Dardanelles and Mount Athos. These are large islands, generally mountainous, but fertile. *Imbro* lies 21 miles west of Cape Janissary, is 16 miles long, 9 broad, and contains some fine villages. The interior is woody. *Samothraki*, 14 miles N. of Imbro, is an oval-shaped rocky island, 8 miles long, and 6 broad. Its summit, Mount Fengari, rises 5248 feet above the level of the sea. (See *antè*, p. 153.) In ancient times it was celebrated for mysteries. *Thaso* is a large oval-shaped island, 30 miles N. of Monte Santo, and near the coast. It is 18 miles long, and 14 broad; and its summits, Ipsario and St. Elias, rise respectively to 3128 and 3374 feet above the level of the sea. *Stalimené* (ancient *Lemnos*) is a fertile and beautiful island, opposite the mouth of the Dardanelles, from which it is 41 miles distant. Its greatest length is 15 miles, and its breadth nearly equal; but its form is irregular, and it is almost cut in two by the ports of Paradise and St. Antonio. *Lemno*, the chief town, is on the west coast, but it contains no object of interest. *Thaso-poulo*, a small island between Thaso and the mainland. *Mouillani* and *Diuporo*, two small islands in the Gulf of Monte Santo. *Kasandra*, a small island in

the gulf of that name. *Sasseno*, a small island off the Gulf of Avlona. *Kriti*, or *Candia*, a large island, forming the southern border of the Archipelago. (See *post.* p. .)

RIVERS.—DANUBE (See *anté*, p. 393.) Its principal affluents in Turkey are:—On the right, the *Save*, with its affluents, the *Unna* from Croatia, the *Verbas* or *Verbitza*, the *Bosna*, and the *Drina*, from Bosnia; the *Moravva* or *Morava*, with its affluents the *Ibar* and the *Nissava*, from Servia; the *Timok*, *Lom*, *Ogoust*, *Skitul*, *Iaker*, *Wid*, *Osma*, *Jantro*, *Jemurlu*, from Bulgaria. On the left, the *Syll*, or *Schyll*, *Olt* or *Alouta*, *Ardjis*, and *Jalonitza*, from Wallachia; the *Sereth*, and *Pruth*, from Moldavia.

The MARITZA, which drains the plain of Adrianople, and has a course of 320 miles into the Gulf of Enos in the Archipelago. Its principal affluent on the right is the *Arda*; on the left, the *Tunja*, and the *Erkenheh*. The *Karasu*, or *Strouma*, or *Marmara* (ancient Greek *Strumon*, Latin *Strymon*), flows through eastern Macedonia, into the Gulf of Orphano or Contessa, after forming and running through the Lake Kadaka. The *Vardar* flows from the Tschar-dagh through Macedonia, passing by Uskub and Gradisca, into the Gulf of Saloniki, a few miles to the west of that city. The *Indje-Karasu* flows through the southern part of Macedonia into the Gulf of Saloniki, not far from the mouth of the Vardar. The *Salambria* (ancient *Peneus*) drains the celebrated vale of Thessaly, and opening a passage between Ossa and Olympus (the vale of *Tempé*), flows into the Gulf of Saloniki. The *Hellada* (ancient *Sperchius*), flows through the southern part of Thessaly into the Gulf of Zeitoun.

The *Aspro-potamo (Achelous)* drains the western slopes of Pindus in Albania, and flowing southward, through Western Greece, falls into the Ionian Sea. The *Arta* also flows from Pindus into the Gulf of Arta. The *Kalemas* flows through Lower Albania, into the Channel of Corfu. The *Voiussa* or *Vedis*, with its affluent the *Argyrocastron*, in Lower Albania, flow into the Adriatic. The *Ergent*, called also the *Beratino* and the *Krevasta*, flows from the mountains north-west of Kastoria, through Middle Albania, into the Adriatic. The *Scombi* or *Tobi*, the *Mati*, the *Black Drin*, and the *White Drin*, the *Bujana*, named *Moracca* in the upper part of its course, all flow through Albania, into the Adriatic. The *Narenta* in Hertzegowina or Turkish Dalmatia.

LAKES.—*Raselm* or *Rassein*, near the mouth of the Danube (see p. 393), is rather a lagoon than a lake. *Takinos* or *Kadaka*, formed by the Strouma, *Betchik*, *St. Basili*, and *Ienidja*, in Eastern Macedonia; *Kastoria*, in Upper Macedonia, 80 miles W. of Saloniki; and the mountain lakes of *Joanina*, 2500 feet above the level of the sea; *Skutari* or *Scodra*, *Ochrida* or *Okhrida*, *Plava*, and others in Albania.

CLIMATE.—In a country consisting of so many high plains, and intersected by so many lofty mountains, the climate must necessarily be very various, being affected not only by the elevation of the ground, but also by exposure to the prevailing winds. Commencing with the Danubian provinces, we find Bosnia and Croatia to be high and cold countries, though, on the fruitful plains near the banks of the Drina, the winters are mild. In the higher parts, however, snow lies for half the year to the depth of several feet, and Fahrenheit's thermometer has been often observed between 10° and zero. The heat of summer is seldom oppressive; but the northern districts are then warmer than the southern. The weather is often tempestuous from the beginning of June to the middle of August; the forests on the mountains collect the clouds, but the great rains during these months fertilize the ground. Spring begins in the high country about the end of April, and continues till June; the summer's heat then commences, and lasts till September; snow falls generally before the end of that month, and does not entirely disappear till the middle of May. Bosnia is, on the whole, a very healthy country; it is well supplied with water, the air is salubrious, and marshes are almost exclusively confined to the banks of the Save. The climate of Servia much resembles that of Bosnia, though, being a lower country, it is somewhat more temperate, particularly in its long open plains. Bulgaria is a country highly favoured by nature; the cold is sometimes as severe as in Servia, but, being sheltered on the north, the common temperature is sufficiently mild to ensure the cultivation of the vine, corn, tobacco, and various kinds of fruits. The climate of Wallachia is more temperate than that of the adjoining provinces; but the inhabitants are exposed to two months of severe cold in winter, and to two of excessive heat in summer. Lower Wallachia, being overspread with extensive marshes, is unhealthy, and bilious and intermittent fevers are common diseases. The winters in Moldavia are in general intensely cold; the thermometer has been seen at 15° below zero. The summers, on the contrary, are very warm; the grape ripens by the end of July; and the vintage is over in September. Upper Macedonia and Thrace, the modern Roumelia, were considered by the ancients to be cold countries, and in the former was placed the residence of Boreas. At Constantinople the climate is extremely changeable; and the temperature sometimes falls 31° in a single hour. Indeed, it depends upon the prevalence of the north or the south wind, whether one is shivering in the cold of Russia, or luxuriating in the balmy atmosphere of Greece. The sky is genuine English, here a portion of blue, there a rolling mass of white clouds. Like that of England, too, it seldom continues for twenty-four hours the same. The winters are extremely long and severe; the roads are often blocked up with snow; and the wind on the Bosphorus is frequently so violent, that all communication with the villages far up the channel is cut off. The countries on the Adriatic, Dalmatia and Albania, partake of the warm temperature of Italy; but are also subject to droughts, and to sudden and violent north winds. The climate of the Lower Albania, or ancient Epirus, is colder than that of Greece; spring

does not set in before the middle of March; but the summer's heat is oppressive in July and August; in which months many streams and rivers are dried up, and the grass and plants are withered. The vintage begins in September; heavy rains fall in December, and are succeeded in January by some days of frosty weather.

SOIL AND VEGETATION. — A great difference may be observed in the vegetable productions of the provinces within the basin of the Danube, and of those to the south of the central mountains; in the southern provinces the mountain sides are covered with forests of fir, yew, pine, ash, cedar, holm, oak, plane, maple, carob, sycamore, beech, walnut, and chestnut-trees. Towards the north, however, the most common trees are the ash and the lime; the carob, the sycamore, and the plane never grow but when forced by artificial means or by cultivation. The heights of the Danube are clad with apple, pear, cherry, and apricot-trees, whole forests of which may be seen in Wallachia; which extend beyond the Balkans, and cover the hills of Thrace, Macedonia, and Epirus. The olive and the orange-tree thrive beyond the 40° only near the sea, but never flourish in the interior; where the cold is too severe. The climate to the south of the same parallel is wholly different. Apple and pear-trees disappear; the olive then becomes the most common fruit-tree, and the plantations in the southern regions are interspersed with the laurel, and the large-caped myrtle. The vine is grown over the whole country, but the grapes produced on the banks of the Danube are very different from those of the coasts of the Archipelago. In the latter region they contain a great quantity of saccharine matter, while those of Wallachia are watery and acid. Strong and generous wine might, however, be obtained from the vineyards of Servia and Herzegwoina, where they are sheltered from the cold of winter, and the scorching heat of summer. Indeed, were proper attention bestowed on the cultivation of the grape, the vineyards of Turkey would not be inferior to the finest in the world.

In Bosnia the hills are covered with firs, pine-trees, and birches; the plants chiefly cultivated are barley, oats, polygonum, fagopyrum, rye, potatoes, hemp, flax, and plum-trees for brandy. Turkish corn does not grow well, except in the deep sheltered valleys; and vineyards are found only near the banks of the Save. On the higher ridges in the south of Bosnia there is, below the forests of fir and pine, a zone of elms, which rises to the height of 3800 feet on the southern declivities; oaks occur lower down, and on the borders of the Albanian low country, are chestnut-trees, and vineyards. The greater part, however, of Bosnia seems better adapted for the rearing of cattle than for the production of grain. In Servia, wheat, maize, and millet amply repay the labours of the husbandman; tobacco, flax, and hemp are grown in large quantities; and whole districts are covered with apple, pear, and cherry-trees. The lower parts of the hills are covered with forests, which are mostly composed of oaks, interspersed with some ashes, a species of tilia, a great many wild pear-trees, some apple and cherry-trees, and a few hazels. In central Servia, elms occupy the plateaux, oaks occur on the sides of the mountains, and fir-trees near the summits. In the higher hills farther south, even fir-trees disappear, and the summits afford only alpine pasturages. In the valleys of the Morava and the Toplitza, and the defiles of the mountains, the Bulgarians cultivate their fields and gardens in a most admirable manner. The valleys are covered with villages, where maps only indicate a wilderness, and the cultivated fields extend far up among the hills. Vines, however, do not thrive well in the Morava valley, except round Nisha, Leskovacz, Uranja, Urkup, and near Pristina. Indian corn is cultivated in the lower valleys, where the Servian mountains protect them against the north winds. In Bulgaria the common temperature is sufficiently mild to ensure the cultivation of the vine, corn, tobacco, and various kinds of fruit. The extensive forests are varied by different trees, the beech, the pine, and the oak; and the sides of the mountains abound with fertile pastures. In Wallachia the mountains and several islands in the Danube are covered with forests of oak, pine, and beech. The pastures are fertile in aromatic plants. The fields of maize, wheat, and barley, fine melons, and a variety of other fruits, and whole forests of apple, plum, and cherry trees, bear ample proof of the productive qualities of the soil; but not more than a sixth part of the soil is cultivated. Wheat and barley are cultivated throughout Moldavia. Millet is also a common crop. The cultivation of fruit-trees and esculent plants is not in a very advanced state. The melon, however, thrives throughout the province; but the grape is the most valuable of the Moldavian fruits.

The southern base of the Balkans is remarkable for the exuberance of its vegetation, which consists of gardens of roses, jasmine, and wild lilac, vineyards, and forests of all kinds of fruit trees; but without the olive tree, the *anis*, or the *lepleb*. The

adjacent plains, however, are destitute of trees, and consist chiefly of fields under cultivation, and of pasture grounds, which are partly marshy, and have a black soil. The plain of Adrianople is celebrated for its roses, from which large quantities of attar are made. This region extends to the low hills which border the Black Sea, the Propontis, and the Archipelago. The soil of Macedonia is more fertile than the richest plains of Sicily, and there are few regions of the world so productive as the peninsular districts on the Archipelago. The land, in some of the valleys, yields the most luxuriant crops of wheat; cotton and tobacco are also grown to a great extent. Macedonia is likewise famous for its wines; corn, and different leguminous plants are profitably cultivated in the interior. In Southern Macedonia we find a Mediterranean vegetation, the evergreen-oak, the cypress, Grenada tree, oriental plane, the walnut, the fig, &c. The olive is cultivated to the south of Saloniki. Thessaly abounds in oil, wine, cotton, silk, and wool. Larissa is surrounded by a country fruitful in oranges, lemons, citrons, and pomegranates. The same district produces fine figs, excellent melons, grapes, almonds, olives, cotton, and tobacco.

The Albano-Dalmatian flora is connected with that of Italy. The olive rises to the first heights, beyond which the high country is noted for its fertile fields, excellent pasturage, and lofty forests. The basin of Skutari is, however, so much protected from the north winds that the heat is oppressive during summer, and the climate is on this account favourable for the growth of Mediterranean plants, as the pomegranate and the orange tree. The olive is also found here, though its true native country commences more to the south, at Durazzo. Mostar, likewise protected on the north by the high mountains of Bosnia, is, like another Nice, surrounded with gardens of pomegranates, olives, and orange trees, rising in terraces, and forming a fertile oasis in the stony calcareous soil of Herzegowina. In Lower Albania, the ancient Epirus, oak trees of every kind arrive at great perfection. The plane, the cypress, and the manna-bearing ash appear on the coast beside the laurel and the lentisk; but the forests of Pindus consist chiefly of cedars, pine, larch, and chestnut. Many of the mountains are dry and sterile; such as are sufficiently watered are covered with herbage, or with the wild vine, and thick groups of elders; in spring their sides are clad with flowers. The violet, the narcissus, and the hyacinth, appear in the same profusion as in the mild districts of Italy. Cotton and silk are cultivated; but the olive, for want of proper care, does not yield an abundant harvest. The Amphilochian peach, the Arta nut, and the quince, are found in a wild state in the woods, and in the uncultivated land.

ANIMALS.—The Thessalian horses were celebrated for their symmetry and strength, and have been improved by crossing with a Tartar breed, which was introduced by the Turks. A great many horses are reared in Moldavia, but those bred in the mountains are the most valuable. Although small, they are not inferior in strength and speed to the Russian horse; those of the plains are larger, but not so swift. The cattle of Wallachia are large and strong, many thousands of which are annually exported to Bosnia and Constantinople. The meadows and pastures are of a rich and excellent quality, and large herds of beeves and flocks of sheep are fattened upon them. Sheep abound in Wallachia, Macedonia, and Thessaly; but the goat is more valued by the inhabitants of the mountains. The wild boar, the roe, and the fallow-deer frequent the forests. The principal carnivorous animals are the fox, the wolf, and the bear. A species of wolf, smaller than that of the hills, has been observed on the plains; it haunts the banks of the Dannbe, and finds shelter in the marshes, or among the reeds. The partridge and the bustard abound in the valleys. The lion was not uncommon at one period in the southern parts of Turkey, and in the time of Aristotle frequented the region between the Achelous in Acarnania and the Nessus in Thrace; but it has been long since extirpated.

PEOPLE.—The dominant people are the Osmanlee, or Othmanlee, or Ottoman Turks, a branch of the great Toorkee family of Central Asia; who are dispersed, more or less, over the whole country. There are, however, various other races, some of them more numerous than the Turks, who inhabit different provinces, and are also found scattered. These are the Roumi or Greeks, Arnauts or Albanians, Bulgarians, and other Sclavonians, Wallachians, Armenians, Jews, Gipseys, and Franks.

The OSMANLEE have been generally considered as members of the Caucasian variety of mankind; but learned Orientalists have at last succeeded, by the aid of the Chinese annals, in identifying them with the Hiong-nu, a people who lived to the north-west of China, many centuries before the Christian era, and carried on frequent and bloody wars with the Celestial empire. From that region their migrations can be traced westward, till they finally settled in those parts of Asia and south-eastern Europe where they are now found. The Osmanlee and their brethren, the Tartars of Kazan,

Astrakhan, and the Crimea, have indeed the physical characteristics of Caucasians; but the inhabitants of the country further east, as the Nogays, Kirghises, Turcomans, and others, who speak pure Turkish dialects, are known to have a different organization, approaching nearly to the Mongolian character. It is therefore inferred that the Turks were originally members of the Mongolian variety, and that the portion of them which now exhibit Caucasian features, must have acquired them by intermixture with the Caucasian races whom they invaded and subdued.—(*Prichard on the Ethnography of High Asia. Journal R. Geog. Soc. Lond.* IX. 192.) In accordance with this theory, we find a recent traveller asserting, that any one who has paid even but slight attention to physiognomy, will, after a short residence in Turkey, perceive that the Turks belong to three essentially different classes: 1. the original Turk or Mougol; 2. the modern Turk, or Caucasian: and, 3. the moncrel Turk, or mixed breed. The Mongol Turks are by far the most numerous and the most indolent: their stature is generally short, frame thick-set, complexion dark, with a round face, thickish lips, widely distant eyes, and sunk features. The Caucasian Turk, on the contrary, is taller, has a longer forehead, well-formed face, aquiline nose, short upper lip, full chin, and clear complexion; while the mixed or mongrel Turk bears an affinity to one of the first two classes, in proportion as his descent is of remote or modern relation. Osman, the founder of the Imperial dynasty, is said to have been a pure Mongol; but the late Sultan was, and the present Sultan is, a pure Caucasian, a circumstance thought to strengthen the belief which has long prevailed, that the imperial family are not the genuine descendants of Othman. The greater part of the chief Pashas and grand officers of state are also of the Caucasian family.—(*Turkey and the Turks, by John Reid*, p. 100.) But, though the Turks may be physically divided into three separate classes, yet, in a moral point of view, they may be considered as one; such is the levelling character of their religion, that all personal distinctions are at once brought down, and set aside by the law and the prophet. The character of the Turks is, however, a question on which there is the greatest difference of opinion among European writers and travellers. Influenced by prejudice or feeling, and forming their conclusions from imperfect knowledge, or writing merely to serve a party purpose, these persons have given such conflicting accounts of the Turks as can scarcely be reconciled, or even considered as applicable to the same people. But, after a careful consideration of these conflicting statements, we are inclined to the opinion that, in respect of moral character, the Turks are not much, if at all, inferior to the generality of their European neighbours; while to some of them they are decidedly superior. Their character, however, varies in different provinces, some of them being more barbarous than others; but, considering the pernicious system of government to which they have been subjected for centuries, it is more surprising that they possess any good qualities at all, than that they are not so thoroughly humanized as some more favoured nations. They are indeed very ignorant, but, at the same time, very simple-minded, and seem fairly entitled to the reputation of being a devout, honest, and well-disposed people. The Osmanlee spurn the name of Turk, which they consider as a term of contempt, synonymous with *barbarian*; but glory in that of Osmanlee, as expressive of valour and polish. The Turkish language is everywhere throughout the empire the language of government, and generally that of trade. It is indeed the only language that will afford a means of communication with all the various tribes and races scattered over Turkey. Besides the Osmanlee, there is another race of Turks, called the *Dobrujee*, or *Dooroodschee*, who occupy the eastern part of Bulgaria, between Shumla and the Black Sea, and are divided into two hordes, the *Orak* and the *Orumbet*.

The HELLENES, called ROUMI (i.e. Romans) by the Turks, and GREEKS by Europeans, the mixed descendants of the ancient Greeks, Romans, Macedonians, Thracians, and other tribes, who formerly possessed the country. They are very numerous in Thessaly, Lower Albania, Macedonia, Thrace, and Candia, and are found also in Wallachia and Moldavia. They bear everywhere a very indifferent moral character; but form a strange contrast to the saturnine Turk, or the taciturn Armenian; for they are active and enterprising, versatile, loquacious, lively, vapouring, and disputatious, continually hunting after distinction. The character of the Greeks is deeply imbued with credulity; and their religion is a tissue of the most degrading superstitions; but they are quick of perception, fond of quibble, and delight in sophistry. They receive the impress of every mould, and the impulse of every agent; but are sadly deficient in honesty and stedfastness of purpose. They are of pure Caucasian lineage, their features are generally noble, and regular; their eyes are large and black, eyebrows arched, complexion brown, hair dark, most frequently black; their stature above the middle size, thick-set, and muscular, yet handsome and elastic. Upon their upper lip they generally wear a moustache; beards are worn only by their priests and men in authority. The Greek women are decidedly handsome in figure, which is not injured by artificial means, beautiful in features, and elegant in manners. Their eyes are large, black, and sparkling, their air languid, complexion pale, hair black, teeth white and regular, and stature short. They are possessed of great natural shrewdness; but few of them are educated; and their moral character is but little elevated.—(*Reid*, 132.)

The ARNAUTS, ALBANIANS, or SKIPITARS, form the majority of the population of Albania, but are also found in great numbers in Roumelia and Bulgaria. They were probably a tribe of the ancient Illyrians, who migrated from the northern mountains in the declining period of the Roman empire; but it is not to be imagined that a primitive tribe, or one which has remained unmixed during twenty centuries, exists in a country like Turkey, inhabited by so many different nations confounded with each other. Yet the Albanians are easily distinguishable by their physiognomy, temperament, and character, from the Greeks and the Turks. They are strong, active, sober, and patient of fatigue; their happiness consists in action, and their habits are warlike; but of glory and patriotism they have no conception; their services may be purchased by any government; and, at home, they too often exercise the trade of robbers. They are, indeed, a rude and barbarous people; most of them are professors of Islam; and but few are very scrupulous about the observance of its precepts.—(*Malte Brun*, VI. 189.)

The BULGARIANS derive their name from an ancient Turkish or Tartar people who settled on the Volga in the fourth century, and moved afterwards to the countries between the Don and the Bog, and latterly to the south of the Danube, where they founded a kingdom, whose monarchs waged very sanguinary wars with the Greek empire. But the Bulgarians being fewer in number than the people whom they conquered, lost their nationality, and in the course of two centuries became entirely Sclavonized. They were converted to Christianity in A. D. 860, and, from savage warriors, have softened down to a peaceful, industrious, and hospitable people. They are Christians of the Greek church, and form, next to the Armenians, the most respectable and most valuable class of the population of the empire. The other Sclavonic races are the inhabitants of Moldavia, Servia, Bosnia, Croatia, and Herzegowina, who are all members of the Greek church, but vary considerably in character, and language, in the different provinces.

The SERVIANS are a very industrious race; and, by their indomitable courage, have secured the independence of their country, or at least the right of self-government, which is the utmost that can be expected by a small nation surrounded by more powerful neighbours. They are the descendants of a colony of Servians or Sclavonians which migrated from Gallicia in the seventh century; and they have preserved their nationality in its full integrity. Their language is an intermediate idiom, partaking of the Russian and the Polish. The VLACHS, WALLAKS, or WALLACHIANS, who give their name to Wallachia, and are spread in great numbers into the adjoining provinces, appear to be the descendants of the ancient Dacians and of the Roman colonists settled among them after the conquest

of Dacia by the Emperor Trajan. They call themselves *Rumunyi* (*i. e.* Romans), and retain a traditional pride of ancestry in spite of their present degradation. Their language is soft, abounding in vowels, and derives most of its words from the Latin, with only a small intermixture of the Sclavonic. The pronunciation nearly resembles that of the Italian; and it is a remarkable fact that the inflection and terminations of the words have a much greater similarity to those of the modern language of Italy than to those of the Latin; a circumstance which, as there has been no connection between the countries since the time of the Romans, would go to prove either that the vulgar language of Rome was more simple than is commonly imagined, or that, in both cases, the changes which have taken place are those which a polished language naturally undergoes when mixed with others, or simplified by the usage of uneducated and foreign people. It is difficult to determine how far the Wallaks have any title to their claim of Roman descent. The Roman colonists generally retreated across the Danube when Dacia was abandoned; but some of them may have remained; and from such the Wallaks of Hatzeg, in Transylvania, trace their descent. The rest are content with the mixture of Roman and Dacian blood, which one may suppose to have taken place between the conquerors and the conquered; and the features of the Wallaks resemble more those of the Dacians on Trajan's column than those of the Romans or the modern Italians. Their modern foreign name is said to be derived from the Illyrian word *Vlach*, a herdsman, or shepherd. But, besides the Wallachians of the Danubian provinces, there are various tribes of the same name, who occupy the ridges of Pindus and Olympus, descending in winter with their flocks into the low countries of Thessaly and Macedonia. They are a hardy race, less ferocious than the Arnauts; sober, industrious, cleanly, and in high repute throughout Greece as shepherds. The MONTENEGRINS, who inhabit the southern part of Herzegowina, are the bravest, but at the same time the most savage and uncivilized of the southern Sclavonians. They possess a country surrounded by high mountains, which is quite inaccessible to their enemies, and of which the Turks have never enjoyed more than a nominal domination. The Turks are at present content to receive a small tribute, leaving the government and administration of civil affairs to the *Vladika*, or archbishop of Montenegro, who is under the protection of Russia. The people, though they have apparently conformed themselves to some of the Russian laws, have preserved with great fidelity the larger part of their national customs.

The ARMENIANS of European Turkey are comparatively a small body; and are a portion of that vagrant nation, who, like the Jews, expelled from their original country by foreign invaders, are now found scattered over all the regions of south-western Asia, everywhere preserving their national language, manners, customs, and religion. They are a most industrious and honourable people, and are highly esteemed by their Osmanlee rulers. There are still greater numbers of the other two dispersed races, the *Jews* and the *Gipseys*, who bear the same character, preserve the same manners and customs, and pursue the same sort of avocations in Turkey as everywhere else. The *Franks* are people collected from all parts of Europe, and are but few in number.

The estimates formed by European statists of the population of Turkey are entirely conjectural, and differ widely in amount. We find the following statement of the total population, and of the numbers of the separate races, in the Weimar Almanack for 1840, which is, perhaps, as near the truth as can be reached. It is taken, we believe, from a work of Mr. Urquhart. Osmanlee, 700,000; Sclavonians and Bulgarians, 6,000,000; Albanians, 1,600,000; Greeks, 1,180,000; Wallachians, 600,000; Jews, 250,000; Gipseys, 200,000: Armenians, 100,000; Franks, 50,000; total, 10,680,000, under the direct dominion of the Padishah; to which number is to be added the population of Wallachia and Moldavia, 1,500,000, forming a total population of 12,180,000 for the whole of Turkey in Europe.

RELIGION. — All the Osmanlee, and great part of the Albanians, are Moslem; the Greeks, Wallachians, Moldavians, Servians, Montenegrins, and Bulgarians, are members of the Greek Church; the Armenians adhere to the Armenian Church; the Franks belong to the various religious sects of *Frankistan* (Europe); and the Jews are followers of the law of Moses.

The law and the religion of the Moslem being both founded on the Koran, the clergy, and the lawyers form but a single order, named the *Chain of the Ulema* (*i. e.* of the learned), at the head of which is the Grand Mufti, or Sheikh-ul-Islam, who alone holds his office for life. He is the fountain of law, and the representative of the Khalif, or Sultan, in his spiritual capacity; and as all new laws, and even the question of peace and war, must have his sanction, he thus participates in the legislative powers of the Sovereign, and bears a share in all the movements of the government. The chain of the Ulema consists of various ranks, and admission into it, and promotion to its highest dignities, are nominally open to all; but here, as every where else, birth, wealth, and official influence, are of more value than the personal merits of the candidates. For the instruction of its members there are schools or colleges, named *mudreses*, established in all the imperial mosques; and the first step of promotion is obtained by the student, when, after completiug the required period of study, his name is inscribed in the list of those who aspire to legal offices. If he then acquit himself well in the prescribed trials, he obtains a *medrese*, or professorship, of the lowest income; and afterwards advances by regular steps to the highest rank of the medreses, that of the Suleimaniyeh, out of which the senior muderis are promoted to the rank of Mahrej-Molla, or superior judges, a body who are eight in number, and hold office only for a lunar year. The next step of promotion by seniority is to one of the four superior mollaships of Adrianople, Brusa, Damascus, and Cairo; the next to the two titular mollaships of Mecca and Medina; one of whom is further promoted in turn to the rank of Istamboul-effendi, or Master of the Police of Constantinople. The next step from this office is to that of Kazi-asker of Anadoli; then to that of Kazi-asker of Roumili; and, last of all, to the supreme rank of Grand Mufti. Of course very few can reach these high offices; and the greater part of the students are content with the rank of simple cadis or judges of Naib, or sub-delegates of the judges in the towns and villages throughout the empire.

Minister of War and Commander-in-Chief of all the regular troops; the Seraskier, or Commander-in-Chief of the troops of Anadoli; the Capudan Pasha, or High Admiral; the Minister of Commerce; the Captain of the Guard; the Minister of Finance; the Minister of Foreign Affairs (an office formerly held by the *Reis Effendi*, or Chief Secretary); the Chaoushbashi, or executor of the judgments of the Divan; the Hakimbashi, or Chief Physician; and the President of the Board of Health; 5. Ministers of the second class, namely, the Reis Effendi or Secretary of State; the Treasurer of the Sultan's income; the Beilikshi-effendi, assistant to the Reis Effendi in the executive department of his office; the Master of the Ceremonies; the Director of the Wakuffs, or charitable institutions; the Interpreter of the Porte; and the Director of the Customs. The Council of Ministers is called the *Divan*, from the circumstance of their meeting in a certain room in the palace, which has no other furniture than a *divan*, or wooden bench placed along the wall, about three feet high, and covered with cushions. It is here that laws are made, suits decided, firmans issued, troops paid, and the representatives of foreign sovereigns prepared for their introduction to the august presence of the Sultan. The imperial court itself is usually called by Europeans, by the French designation of the *Sublime Porte*, a name derived from the *Bab-Humayon*, the principal porte or gate of the outer wall of the palace, from which the imperial edicts are issued. But the principal officers of the household frequently possess great power and influence, and exercise more control over public affairs than the ostensible ministers, who are sometimes only their instruments or tools. The Sultan has no legal wives; but he chooses several of the *odalisques*, or females of the palace, generally three or four, never exceeding seven, who bear the title of *Kadine*, or lady, and have each a separate establishment. At his death these are removed to the old palace; but the Sultana Validé, or Sultan's Mother, remains in his palace, and is sometimes allowed to interfere and exercise a predominant influence in public business.

For administrative purposes the empire is divided into provinces called *eyalets*, the larger of which are governed by Pashas of three tails, with the official title of *vizier*; and the smaller, by Pashas of two tails, with the title of *mirimiran*. The eyalets are subdivided into districts called *livas* or *sandjaks*, each of which is under the charge of a Pasha of one tail, with the title of *mira-liva*, or *sandjak bey*; the cities and towns are governed by *mutselims*. These provinces are usually called *pashalics* by Europeans. *Pasha*, however, is not an official title, but is merely a personal honour, like knighthood in Europe, conferred by the Sultan. There are three ranks of pashas (or *bashaws*, as the word used to be spelled by old English writers;) the first or highest class have the privilege of bearing a standard of three horse-tails; the second of two; and the third of one. The pasha is invested with the full powers of absolute government within his province; is the chief of both the military and the financial departments, and of police and criminal justice; with the power of life and death, of making peace and war; in short, of doing what he pleases, so long as he can purchase and secure the favour of the Sultan and his ministers, or set them at defiance. The provinces have hitherto been sold to the highest bidder; the successful pasha, of course, makes it his business to re-imburse his outlay by every species of extortion; and exercises his power in the most tyrannical and reckless manner. Nor is this system of venality confined to the sale of provinces; corruption seems still to pervade every department of the state, civil, legal, and ecclesiastical; and, under its baneful influence, the provinces have been made little better than deserts, and the empire has been brought to the verge of ruin. The late Sultan Mahmoud made many vigorous efforts to reform abuses, and his successor Abd-ul-mesjid, has issued a Hatti-scheriff, or edict, dated 3d November 1839, promising to endeavour by new institutions to secure for the provinces of the empire the benefits of a good administration.

FINANCES.—The revenues of the state are raised by a variety of imposts; but as no accounts are published by the government, we have not the means of stating correctly the amount which reaches the imperial treasury. The Christians and Jews are subjected to a haradz or poll-tax, and other vexatious imposts, from which the Moslem population are free. In the simple institutions which have formed the safeguard of the empire against internal abuse, and foreign encroachment, direct taxation was an essential element. Besides the haradz levied on the rayahs or infidel subjects, in lieu of military service, the whole regular revenue used to be derived from the *miri*, a sort of property-tax, assessed and levied by each community or township separately. A certain sum was fixed as the contribution of each village or district, proportioned to its means, and each inhabitant paid his share according to a rate assessed by the

communal council. When, however, Mohammed II. introduced the system of farming the revenue, he superseded the functions of these councils. The members retained their office and title of *ayan*, but had no longer any control over the pashas, who had purchased their offices, and thereby become owners, or farmers of the revenue. These municipalities, however, still exist, and are acknowledged by the government, but their power is in abeyance; yet it is principally to them that Turkey is indebted for the preservation of its social organization, amidst so many misfortunes, and so long a continuance of misrule. Indirect taxes have also been introduced, similar in character to our excise and customs; and certain duties are now levied on the export and import, the transit, and the sale of merchandise. It is asserted that, of late years, the general revenues of the empire have been in so flourishing a condition, as to have actually left a surplus over the expenditure.

ARMY AND NAVY.—The celebrated corps of Janissaries was at first formed of slaves and captives; but its ranks were soon filled with the bravest of the Osmanlee; and, as a military brotherhood affords some chance of protection against arbitrary power, all crowded to the muster-roll of the Janissaries. The multitudes, however, of which the order at last consisted, were not all subject to military discipline, and only served to fill the empire with turbulence and confusion, without increasing its real strength. The number of Janissaries enrolled, at the close of last century, was about 400,000; pay was issued for 60,000; but not more than 25,000 men could at any time be mustered during the Russian wars. The corps was originally formed as a protection to the Sultan against his powerful subjects, the military or feudatory chieftains; but soon becoming corrupted, it substituted the danger of a pampered and licentious soldiery. Bajazet II., within a century and a half after the organization of the body, formed a plan for their destruction; and Murad IV. destroyed great numbers of them, without, however, exterminating them entirely. Selim III. prohibited the recruiting of the corps, and this act cost him his life. The suppression of the Janissaries at last became essential to the security of the Sovereign and the State; and by one deadly blow, dealt by the late Sultan Mahmoud, that haughty soldiery, to whose predecessors the empire owed the largest share of its extent and glory, was totally extinguished in 1826.

A sense of their declining strength has induced the Sultans, since the beginning of last century, to aim at introducing some military reforms, and to endeavour, by the adoption of European tactics, to retrieve the tarnished glory of their arms; but small success attended their efforts, till the reign of the late energetic Sultan Mahmoud. After the destruction of the Janissaries, Mahmoud determined that the nizam-jedid, or new military force, should adopt the European dress and tactics. He found, however, his Moslem subjects so hostile to these innovations, that he was obliged to enrol only very young men, whose prejudices were not very deeply rooted, and merely retained a small number of old soldiers to incorporate with the new levies, which were raised by conscription, mostly in Anadoli. The French system of tactics was that selected for the infantry, and French officers were appointed as their instructors; but, though the soldiers possess zeal, diligence, and habits of great attention, when under instruction, their instructors have hitherto failed in forming them into an efficient army.

An important part of the army formerly consisted of the spahis furnished, in time of war, by the timariots, or great feudal proprietors of lands in Anadoli, to the amount of about 20,000 good cavalry; but Sultan Mahmoud destroyed these fiefs; and the cavalry soldiers are now levied like the infantry, by conscription; subject to the same system of instruction. The horses are strong and active, and, though not large, have more bone than those of Arabia, and are admirably calculated for light cavalry. The riders are armed with swords and lances, and are generally finer men than the infantry. The artillery are, however, the best soldiers in the army, and work their guns with great dexterity. The soldiers, Marshal Marmont says, are better fed than any other troops in Europe; their magazines are filled with stores, and the regiments have large reserves; their pay is twenty piastres a-month, the whole of which they receive; and, in short, every thing has been done that could promote the comfort of the soldier. The instruction is conveyed in a mild and explanatory manner; harshness is, indeed, unnecessary, as the men are naturally orderly and well disposed, and shew great anxiety to acquire a knowledge of their duties. Owing to their habits of sobriety, offences against discipline are unfrequent. For small offences the soldiers are liable to be caned; and for those of a graver nature, they are subject to the same punishment that would be inflicted on civilians. At

the commencement of the year 1840 the force of the army was estimated at 94,000 infantry and artillery; with 25,000 regular, and 100,000 irregular cavalry.

The Osmanlee have never been a maritime people, nor have they paid any attention to the art of navigation; their military navy, after its triumphs in the fifteenth century, was long neglected, till the Sultan Mahmoud infused his energy into this department, as into every other, and succeeded in creating a very respectable fleet, which he left to his successor. At the time of his death, however, the Capudan Pasha carried off the fleet then at sea, and delivered it up to the Pasha of Egypt. At the commencement of 1840, the number of ships, including, we presume, those at Alexandria, was stated to be ten sail of the line in serviceable order, and five unrigged; 10 frigates on service, one in dock, and 4 unrigged; and 3 steam-ships; besides several corvettes, and other smaller vessels. Before the Greek insurrection, the fleet was manned by the Greeks of the Archipelago; and their pay was furnished by the Greek nation. The patriarch of Constantinople was empowered, by an express order of Government, to impose the requisite sum, called *millahiye*, or the sailors pay, upon the Greek inhabitants of the capital, and, through their archbishops and bishops, upon those of the provinces. The fleet is now manned by landsmen trained in harbour, and is commanded by officers equally ignorant of seamanship, and of naval tactics.

MANUFACTURES AND TRADE. — Turkey is not a manufacturing country; and the people make no pretensions to rival the science and capital of Britain. But their fertile territory and genial climate enable them to supply many of the materials for foreign manufacture; and these with their other agricultural products they are content to raise, and to receive whatever can be furnished to them cheapest and best in return. There are, nevertheless, several places distinguished for the production of excellent manufactured articles. The carpets of Anatolia frequently combine economy and comfort in use with elegance of pattern; while in the beauty and durability of the colour they are equalled only by those of Persia, which surpass them in delicacy and costliness. The Turks, however, have never attained the art of making woollen cloths, except of the coarsest kind; but other branches of manufacture are shewn to be active in the country, from the increased importation of cotton twist, where it is entirely used. The coarser and more common articles of their manufacture, such as muslins, ginghams, and handkerchiefs, have given way before those of England; but the finer fabrics of silk and cotton still maintain the competition, and are likely to do so, from their superior quality, beauty, and durability. Silk stuffs are made at Constantinople and Saloniki; the braziers and ironsmiths of Shumla have carried their art to great perfection; good steel is made at Bosna-Serai, Scutari, Karatovi, and Constantinople; and fire-arms at Semendria, Grabora, and other places. The grand commercial principle of Turkey is unlimited freedom of trade; and though the late Sultan Mahmoud, under evil influence, endeavoured to enforce prohibitions on the export or import of certain articles, yet these prohibitions, and all monopolies, have been again abolished, and the trade is now only limited and restricted by the extent of the supply and demand. The principal articles of export are: horses, beeves, and swine, tanned and raw hides, wool, wine, tobacco, cotton, currants, almonds, figs, dates, and other fruits, olive oil, wax, honey, opium, raw and spun silk, camlet, carpets, morocco leather, gall-nuts, valonia, madder, gum-dragon, sponge, copper, alum, &c.; while the articles imported consist of corn, and every sort of manufactured and colonial produce.

Commercial relations have long been maintained between England and Turkey, and till a recent date there existed in London a Turkey Company, which possessed the exclusive privilege of trading to the Levant. The trade, however, once carried on by the company had gradually dwindled away; the origin of our present trade with Turkey is but of recent date. Before the last war between Britain and Turkey, in 1807, only two or three British vessels proceeded annually to Constantinople with assorted cargoes. Of these, cotton goods formed but a small proportion; and a quantity not much larger was sent to Smyrna. When Malta became a depot for our trade in the Mediterranean, the Greeks, imbued with an almost intuitive talent for commerce, began to make purchases there of British manufactures; and sent from that island every variety of goods likely to suit the market, chiefly to Smyrna, from which the capital was supplied. An English merchant, who had conceived a just opinion of the capabilities of the traffic, established a house at Constantinople in 1812, which for several years had the whole command of the direct trade with England. From that period Constantinople became a rival mart with Smyrna, and has at length com-

riages of any sort, being mere tracks formed by long use; and only a few will admit European carriages. It is, therefore, the custom to travel on horseback; ladies occasionally make use of bad waggons. In European Turkey, the common beasts of burden are horses and asses; in Asiatic Turkey, camels are also employed. For the accommodation of travellers there is abundance of inns, called *han* or *khan*, or, when in small villages, *meyhane*. In these the traveller generally finds during summer every comfort, if he can adapt himself to Oriental customs. Throughout the empire, both in Europe and Asia, there is a great posting establishment, consisting of a series of posts, placed at various distances, from 3 to 16 hours, and extending along most of the great lines of road. In these, horses are kept for the use of the government couriers, called *Tartars*, who form a separate corporation, and are distributed over the empire at the residence of each pasha, where they live in a house set apart for themselves, called the *Tartar-han*. They are generally a good sort of people; and though they drink a good deal of brandy, are always sober when on the road, and intemperate only when they arrive at the end of their journey, or when they have plenty of money, and are in a large town. The Tartars may be engaged by private travellers, as conductors of their journey; but a government order is necessary for the supply of post-horses, which are furnished at a very low rate. When carrying government dispatches, the Tartars travel without intermission, at so rapid a rate that few ordinary travellers are able to accompany them; but, when hired, especially by a traveller, the Tartar acts as his servant, but never mixes with the other servants, dining alone, to maintain his dignity. A *firman*, obtained at Constantinople from the Sultan, gives a traveller the right, not only to have a Tartar as his companion and protector, but also to be put into private lodgings, in the towns and villages, generally in the houses of Christians, who are so accustomed to this regulation, that many have a part of their house expressly set apart for foreigners, to prevent them from seeing their wives and families.

DIVISIONS.—Turkey is usually divided by European geographers into nine provinces or regions, namely, Roumelia, including the ancient Macedonia and Thrace; Thessaly; Albania; Herzegowina; Bosnia and Turkish Croatia; Servia; Bulgaria; Wallachia; and Moldavia. These divisions we shall follow in our topographical description. But for administrative purposes, the country remaining under the direct dominion of the Padishah is divided into four eyalets, which are again subdivided into livas and sandjaks.

The EYALET OF ROUM-ILI comprises Thessaly, Albania, and the western part of Roumelia, and is divided into the livas of *Ioanina*, *Saloniki*, *Monastir*, *Trikhala*, *Scutari*, *Ochrida*, *Avlona*, *Kustendil* or *Ghiustendil*, *El Bassan*, *Perserin* or *Prisrend*, *Dukagin*, *Uskup*, *Delvino* or *Delbino*, *Velitschterin*, *Cavala*, and *Alaja-hissar* or *Krukhovacz*.

The EYALET OF BOSNIA comprises Bosnia, Croatia, and Herzegowina, and is divided into the livas of *Widdin*, *Kiliss-Bosna*, *Izvernik* or *Zvornik*, *Ada-i-kebir*, and *Trebigne*.

The EYALET OF SILISTRIA comprises Bulgaria and the eastern part of Roumelia, and is divided into the livas of *Nicopoli*, *Chirman*, *Viza* or *Wisa*, *Kirkilissa* or *Kirkliseh*, *Silistria*, and also includes the fortress of Belgrade.

The EYALET OF THE JEZAYRS OR ISLANDS comprises the coasts of Thrace and all the islands of the Archipelago, with Cyprus; but many of these are now included in the new kingdom of Greece. This eyalet contains the livas of *Gallipoli*, *Metelin*, *Rhodes*, *Lefcosia*, *Chio*, *Samo*, &c.

§ *Cities and Towns.*

1. *Roumelia.* CONSTANTINOPLE (called by the Turks STAMBOUL, or ISTAMBOUL), the metropolis of the Ottoman empire, and the chief city of Islam, is situate on a hilly promontory at the southern entrance of the Thracian Bosphorus, in N. lat. 41° 1′ and E. long. 28° 55′. The city is built on seven hills with their intervening valleys, and forms an irregular triangular-shaped area, pointing to the east; having its south side washed by the Sea of Marmora, and its north by the waters of the Golden Horn, which, extending five miles inland from the Bosphorus, forms one of the finest harbours in the world. The west side is formed by a triple wall which stretches across from the harbour to the sea. The total circuit of the city is between 11 and 12 miles, of which each of the three sides occupies nearly four, the harbour side being considerably the shortest. Within this enclosure the city forms a confused mass of narrow, winding, steep, and dirty streets, crowded with wooden houses, and interspersed with numerous mosques, the principal of which crown the summits of the seven hills with their massy domes and lofty minarets, and give to the city, from a distance, an appearance of magnificence which a closer examination dispels. The point of the promontory is occupied by the Serai or imperial palace (called *Seraglio* by the Franks), which consists of a group of buildings of various forms and dimensions, in the midst of numerous courts and gardens, the whole being surrounded by a high wall. The principal buildings in the city are the mosques, of which there are twenty dignified with the title of *humayoun* (imperial). The first of these is the ancient church of the Holy Wisdom (*Ayia Sophia*, most absurdly converted by Europeans into a female Saint Sophia), founded by Constantine, and rebuilt in its present form by the Emperor Justinian, in the sixth century. Externally, it is a large square building, crowned with cupolas; but, inside, it exhibits the form of a Greek cross, the intersection of which is surmounted by a very flat dome, 115 feet in diameter, and 180 feet above the floor. In front is an ancient belfry; and its Moslem masters have added a beautiful minaret at each of the four corners. This mosque closely adjoins the Serai. Nearer the south end of the same hill is the Ahmedya, or Mosque of Sultan Achmed I., which is not only the chief of all the mosques, but also the only one in the empire that has six minarets. It is the State Church, or Cathedral, of Constantinople; for to it the Sultan generally repairs on the two great festivals of the Bairam, accom-

panied by his whole suite; and it was here that Sultan Mahmoud appealed to his assembled people for their assistance to crush the Janissaries. The Suleimaniyeh, the most splendid monument of Ottoman architecture, and built under the greatest of the Ottoman Sultans, Suleiman the Magnificent, in the middle of the sixteenth century, by Sinan, the greatest architect in the empire, stands on the top of the second hill, and contains, within its sacred precincts, the mausoleum of the founder, his consort, and his children. These, and all the other mosques, are built after the model, or in imitation of St. Sophia's; but the latter is greatly surpassed by the Suleimaniyeh. The general plan of them all is the same; they contain, within their outward enclosure, a fore court, a garden or place of graves forming a back court; and, between the two, the sanctuary itself, the mosque, which, if small, is called *mesjid* (the place of worship), if large, *jami*, (the assembler.) Of the latter there are said to be 100 in the city and its suburbs; and it is only in them that, on Fridays, the prayer for the Sultan is pronounced from the minber, or speaker's pulpit. As in Islam all instruction is founded on religion, and jurists are at once theologians and lawyers, it is natural that mosques should be the central points around which scientific and literary establishments should be grouped. Thus in the Constantinopolitan mosques are founded the mudreses and the libraries; and of these institutions Constantinople possesses about 300.

Besides the church of the Holy Wisdom, there are several other remains of Roman antiquities, as a monolithic Egyptian obelisk, another obelisk formed of several pieces, and appearing to have been once covered with brass, and a brazen column formed of the bodies of three twisted serpents, in the Atmeidan or Hippodrome, an open area adjoining the Serai, 250 paces long by 150 broad, and originally formed in the ancient Byzantium by the Emperor Severus; the burnt column in the street of Adrianople; the column of Theodosius in the palace garden; the cistern of Constantine, now called *Binderik*, or the thousand and one pillars, and the *Yerebatan Serai*, or subterranean palace, two ancient reservoirs, both situate near the burnt column; and the *Bosdjekan-kemeri*, or aqueduct of the Emperor Valens, connecting the third and fourth hills, and consisting of two rows of arches, partly ruinous, though still serving to convey water.

Constantinople contains a number of covered bazaars, which have more the appearance of a row of booths in a fair, than of a street of shops; yet the arrangement and exposure of their various and gaudy articles would astonish a person familiar even with the splendour of London. Not only these bazaars, but those which more resemble open streets, are severally allotted to particular trades and articles of merchandise, after the manner of Athens and Rome, and of this city when under the dominion of the Greeks. Water is to the Orientals the symbol of the principle of life, and the words of the Koran, "By water everything lives," is almost universally inscribed on the great fountains, some of which form the finest ornaments of the city. Baths are a luxury indulged in by all classes, and of these useful establishments there are about 130 dispersed through the city. Some of them are built of marble, but in general their external appearance is no way remarkable. Internally, they are divided into a number of circular rooms, lighted from cupolas, and containing the baths, with all their necessary appendages. The supply of water is brought by aqueducts, partly above and partly under ground, from seven reservoirs or *bends*, in the neighbourhood of Belgrade, a village 15 miles to the north of the city. For the reception of strangers, there are 180 *khans* or inns, which are just so many large stone barracks or closed squares, and have, like the baths, every recommendation except architectural elegance. They generally contain a range of warehouses and stables on the ground floor, and ranges of small chambers in galleries above, which are kept neat and clean by the servants of the khan, and are fitted up for the time with the carpets and slender wardrobe of the occupiers. These useful structures are the work of sultans and other munificent individuals; so that strangers, with the exception of a small fee to the servant, are gratuitously lodged, and, during their sojourn in the city, are masters of their rooms, of which they keep the keys. They are open to men of whatever quality, condition, country, or religion; and have contributed to attract the merchants and the merchandise of the furthest Moslem countries of Africa and Asia to the Imperial city. During fires or insurrections, their iron gates are closed, and they thus afford complete security to the persons and the property of the merchants.

Connected with the Imperial Court, are two buildings in Stamboul which require notice; namely, the *Eski Serai*, or Old Palace, and the *Yedi Koulleler*, or Seven Towers. The former is a large walled structure in the heart of the city, used as the residence of the cadines of the deceased sultans and their attendants; the latter is an ancient castle at the south-western corner of the city, close by the sea. Three of the seven towers have disappeared; those remaining are 200 feet high; but the whole is ruinous, and garrisoned only by a few soldiers. It was originally built soon after the foundation of the city, was repaired and strengthened by Mohammed II., and afterwards became the chief garrison of the janissaries, and a state prison.

Outside the city walls, and beyond the harbour and the Bosphorus, are several towns and villages, which may be called the suburbs of Constantinople. Immediately adjoining the wall, to the westward of the city, are the villages of *Eyoub*, *Otakdgiler*, *Merla-hane*, *Balukli*, *Kutchuk-Baluklı*, and *Buyuk-Sal-hane*; on the north side of the harbour are *Galata*, *Pera*, *Top-hana* and *Fundukli*, *St. Demitri*, *Cassim-Pasha*, *Haas-kioy*, and *Soudlejeh*; on the east side of the Bosphorus is the large town of *Scutari*, about nine furlongs from the Seraglio point, and *Top-hana*. *Galata*, the largest of the suburbs, is the principal seat of trade, and the usual landing-place from the Sea of Marmora. It extends along the north side of the harbour, near the entrance, and up the slope of the adjoining hill which is occupied by Pera, and from which it is separated only by a wall with gates, which are closed at night. The dwelling-houses of Galata are built of wood, but the warehouses are of stone, arched, and provided with iron doors and shutters, as a precaution against the frequent fires. As a further precaution, a watch is set upon a lofty tower which commands an extensive view, and from which the alarm is given. There is a similar tower, called the Seraskier's, in Stamboul, near the palace. Galata contains the Imperial custom-house, a Roman Catholic church, a convent of Dominicans, and one of the Capuchins; and a number of Greek and Armenian churches, but only one mosque. *Pera* is the head-quarter of diplomacy, and the residence of the European ambassadors and consuls, and is chiefly inhabited by Franks. It is devoid of any Oriental character, and bears much resemblance to a second-rate Italian town. *Top-hana* forms a continuation of Galata along the shore to the eastward, and derives its name from the cannon foundry established here. It contains also the artillery barracks: and its fine quay is the usual place of embarkation for Scutari and the villages on the Bosphorus. *Fundukli* a straggling village along the shore continuous with Top-hana to the north. *Cassim-Pasha* is an extensive suburb to the west of Galata and Pera, from which it is separated by extensive burying-grounds. It possesses few attractions for strangers. The suburb of *St. Demitri*, occupying a height above Cassim-Pasha, and wholly inhabited by Greeks, was almost entirely consumed by fire in 1832. On the heights behind Cassim-Pasha and St. Demitri is the *Ok-meidan*, or Place of Arrows, where the sultans used frequently to exercise themselves in shooting with the bow and arrow. *Eyoub* is a beautiful and picturesque suburb, at the north-west corner of the city, extending along the upper part of the harbour, and surrounded by gardens and cemeteries thickly planted with cypress. It takes its name from Eyoub or Iob, the companion and standard-bearer of the Prophet Mahomet, who was killed during the first siege of Constantinople by the Saracens, A.D. 668, and was buried here. His burial place was revealed in a vision to the conqueror, Mohammed II., who erected a mosque on the spot. The mosque is an elegant building of white marble, and is the place where the sultans are in-

augurated, by being girded with the sword of Othman, the founder of the empire. No Christian is allowed to enter the mosque, or to reside in the village. As a burial-place Eyoub is held in great veneration, and, next to those of Scutari, its cemetries are the most remarkable of any near the capital. *Scutari*, like Rome and Constantinople, stands on seven low hills, on the east side of the Bosphorus. Its structure in every respect resembles that of the city itself; it contains eight mosques, five of which were built by sultanas and three by sultans. Its ancient Greek name was *Chrusopolis* (Gold-town), probably from its being the place where the Persian tribute was collected. Its modern name of *Uskudar* (Italianized into Scutari) is a Persian word, meaning a courier. Scutari is, and has been from the remotest period, the post station for Asiatic couriers, the great rendezvous of caravans, and the place where travellers to and from the east commence and terminate their journeys. In front of the town is the *Kis-Koulasi*, or Maiden's Tower, built on an insulated rock in the Bosphorus.

The Bosphorus itself we have already described. Its great branch, the Golden Horn, extends nearly five miles inland, with a width varying from two furlongs to five, but gradually narrowing near its termination, where it receives the "Sweet waters" of the rivulet called by the ancients *Lukos* or *Lycus*. The water is deep enough to float the largest ships close to the land; and there is room sufficient for 1200 sail. The steepness of its banks, and its great depth of water, which is subject to no variation from tides, afford peculiar facilities for loading and unloading vessels. The Imperial naval arsenal, *Ters-hana* (the place of shipwrights), is situate near the upper end of the harbour, in the suburb of Cassim-Pasha; the inclosure comprises docks, workshops, stores, and steam-engines. The artificers are chiefly Greeks and Armenians; but the director is, or was recently, an Anglo-American, a man of great talent and reputation, who has constructed ships of the most enormous size. The *Bagnio* or prison is close to the Arsenal, and behind it are the picturesque ruins of the palace of the Capudan-Pasha. In 1837 an elegant wooden bridge, resting on boats, was constructed across the harbour, immediately below the arsenal, which forms a communication between Stamboul and Pera. Ships pass it by means of two draw-bridges. Besides the ships floating in the harbour, the surface of the Golden Horn is covered with a countless number of boats, both large and small, which ply for hire, like the wherries on the Thames. Some of these boats or *caiques* (kaw-eeks) are extremely elegant, and the dexterity of the caiquejee (boatman) makes them glide with great rapidity over the smooth surface of the water. Large and heavy boats, rowed like Thames barges, start at short and regular intervals from Scutari, Top-hana, and the Baluk-bazaar (fish-market), which are crowded with passengers for the villages on the Bosphorus. Steam-boats have lately made their appearance in these quiet waters, to the great annoyance of the caiquejees, whose frail vessels are in danger of being overset by the commotion raised by the wheels.

Constantinople and its suburbs are peopled by a motley assemblage of Turks, Greeks, Armenians, Jews, Franks, and natives of the East, to whom separate quarters or districts are allotted; though in certain parts some of them dwell promiscuously. The Ottomans themselves chiefly occupy Stamboul; but within its walls are also the quarters of the Armenians, Greeks, and Jews. The Armenians have two quarters, one alongside the sea of Marmora, and the other alongside the harbour, very near the middle of each side. These form the busiest, the most valuable, and most respectable part of the population; they are the bankers, the corn merchants, goldsmiths, physicians, surgeons, bakers, builders, braziers, jewellers, weavers, hucksters, in short, the general mechanics, labourers, and men of business. They are mild, persevering, sober, patient, and honest, but skilful in their dealings; and some of them are very wealthy. The Turks highly esteem them, and prefer them to any other people for the management of their commercial and financial transactions. The *Roumi*, or Greeks, called also *Yesirs* or slaves by the Turks, are likewise an important class. They are very much scattered throughout the city, owing, it is supposed, to most of their ancient churches having been allowed to remain, and thus to induce a portion of the people to reside in their vicinity. But the greater number, and the most influential part of them, reside in a district called the Fanar, adjoining the harbour, towards the north-west corner of Stamboul. The Greeks have become almost proverbial for their intriguing character, duplicity, and dishonesty; they are the inveterate enemies of the Turks, and almost all favourably disposed towards Russia. The Fanariotes are the most respectable of the class. But the Greeks of the suburbs are, according to a late traveller (*Reid*), a class of thieves, liars, swindlers, and assassins; a worse set, he says, it would be impossible to find. The Jews are nearly all of Spanish extraction, and understand more or less the Spanish language. There are, however, to be found Jews from Persia, Arabia, Tunis, France, Italy, Germany, Poland, Greece, and Asia Minor; of whom the least respectable are the Greek and the Smyrniot. They have two districts assigned to them; the one named Baleta, on the south side of the harbour, to the west of the Fanar, and the other Haskoi, or Haas-kioy, on the north side; but they are also found in all the Christian quarters, and among the villages on the Bosphorus. Their quarters are the most densely peopled, but at the same time the dirtiest and most squalid portion of the city. The Jews are not confined to mercantile pursuits; but are found exercising the callings of tinsmiths, carpenters, shopkeepers, coffee-house-keepers, tailors, bootmakers, and weavers. The most respectable of them have warehouses in the *hans*; but many of them infest the streets, where they are exceedingly troublesome to strangers; and such is their pertinacity, that violent means are necessary to drive them off. They are a persecuted race here as elsewhere, but still they thrive. In the street they assume the appearance of poverty; but many of them are wealthy, and possess houses richly furnished. The Franks form a motley and varied class, consisting of English, Scotch, Irish, Maltese, and Ionian-British subjects; Americans, French, Italians, Swiss, Prussians, Austrians, Hellenic Greeks, and Russians; all of whom enjoy the protection of their own national laws, which are administered by their consuls. Their number in 1839 was calculated as follows:—Scotch, 120; English, 80; Irish, 21; Maltese, 2000; Ionian-British, 4000; Hellenic Greeks, 2350; Americans, 20; French, 700; Italians, 2600; Prussians, 440; Austrians, 2000; Germans, 3500; Russians, 4000;—total 18,231. The Scotch, English, Irish, and French, are the most respectable; some of the others preserve a decent character; but the mass of them, says Reid, are the most practised rogues, thieves, assassins, gamblers, swindlers, and villains, that ever existed in any city. Pera has long been known as the head-quarters of intrigue and villany; and neither London nor Paris is said to be able to produce a proportionate number of daring ruffians. They seem to be the offscourings of the capitals of Europe; and it is no wonder that the Turks despise the nations whom they represent. Of the total amount of the population the most conflicting estimates have been formed, varying from about 230,000 to upwards of a million. Mr. Reid says that the population of the city and suburbs was stated to him, by an Armenian who had good means of information, to be, at the end of the year 1838, in round numbers, 846,000; of whom 500,000 were Turks; 200,000 Armenians; 100,000 Jews; 28,000 Greeks; and 18,000 Franks and other strangers. But, besides the human inhabitants, there is another class of occupants which form one of the wonders of Constantinople. The dogs are not the property of any one, but are supported by all. Their litters are never destroyed; they are the only scavengers, and may be constantly seen prowling along the edge of the water in search of bodies that may be washed ashore. The dogs are never domesticated, and mosques and other inclosures are carefully guarded from their intrusion. They are susceptible of the plague, but hydrophobia is unknown among them. They have all their peculiar districts, where they observe the most rigid police among themselves; and, should a vagrant invade his neighbours' territory, the whole party immediately assail him.

The receptacles for the dead are not the least interesting or important objects in Constantinople;

they are far more picturesque and commodious than those for the living, and occupy hardly less extent of ground. The people of every creed have distinct cemeteries. Those of the Moslem population are distinguished by the dark cypresses with which they are planted, and by their turbaned stones of white marble. A cypress is always planted at each Mussulman's grave; and, as no grave is opened a second time, their burial grounds have become vast forests, extending for miles round the city and its suburbs. Multitudes of turtle doves frequent these gloomy abodes, and hold a divided sway with bats and owls. Burying within the city is strictly prohibited. The favourite burial place on the European side is the cemetery of Eyoub; but there are also large cemeteries between Cassim-Pasha and Pera and Galata, and along the outside of the western city wall. The cemeteries of Scutari are, however, the largest, the most beautiful, and the most celebrated. The principal one occupies a very large space of ground to the south of the town, and is richer in monuments of illustrious and distinguished men than any of the cemeteries of Constantinople, or of the other villages. Scutari stands on the sacred soil of Asia, and the Turks having a presentiment of their expulsion from Europe, prefer being buried on this holier ground, where they shall be safe from the infidel's tread. The plane, the mulberry tree, and the terebinth or turpentine tree, shade the cemeteries of the *rayahs*, or Christian subjects. The cemetery of the Armenians is pre-eminently beautiful. Beyond Pera are extensive cemeteries belonging to every race.

Constantinople was founded by a colony of Greeks about 658 years B. C., and bore for nearly a thousand years the name of *Byzantium* (Latin, *Byzantium*), derived from Buzas or Byzas, the leader of the colony. Byzantium, however, in its greatest extent, occupied only the two most easterly of the seven hills. In the year 328 of the Christian era, Constantine the Great founded at Byzantium a new city, which was destined to rival Rome, and called it *Roma Nova*; but his own name ultimately prevailed as its designation. For eleven centuries it remained the capital of the eastern portion of the Roman empire; till it was taken by storm, in 1453, by the Turks under Mohammed II., who made it the capital of his empire, and there his successors have fixed their almost uninterrupted abode.

A number of villages, villas, castles, and palaces line the shores of the Bosphorus, forming so many appendages to the metropolis. These our limits permit us only to name. Commencing from Fundukli, on the European side, we find *Dalmabaktche, Beshik-tash, Orta-kioy, Armaout-kioy, Bebec, Roumili-hissar* or castle of Europe, at the narrowest part of the channel, *Balta-liman, Stenek, Yeni-kioy, Kalender, Therapia, Chefeh-kioy, Buyuk-dereh, Sariyeri, Yeni-mukala, Roumeli-kavak, Buyuk-liman, Kazuljee-fort*, and *Roumeli fanaraki* or European lighthouse. On the Asiatic side, commencing from Scutari, we find *Kous-Goundjouk, Starrou, Beglerberg-kioy, Chengel-kioy, Yeni-kioy, Anadoli-hissar* or Castle of Asia, at the mouth of a rivulet called *Giuksou* or the Sweet Waters, *Kandijeh-kioy, Indjir-ki y, Beikos, Yuli-kioy, Sultanieh*, watering-place, *Omourjevi, Unkiariskillessi* or the Emperor's steps, *Fort Joucha*, behind which rises the *Joucha-dagh* or Giant's Mountain, *Anadolikavak, ancient Genoese Castle, Keteli-liman, Phulbournou Pilar-bournu, Anadoli-fanaraki* or Asiatic lighthouse. Besides these, we may mention the *Eagtche-kioy* and *Belgrade*, to the north-west of Buyukdereh, *Sekeri-kioy, Ierli-kioy, Demirchi-kioy, Kila* or *Kilia*, and *Scombre-kioy*, to the north; and *Bourgourli-kioy*, to the eastward of Scutari. In the Sea of Marmora, between 5 and 12 miles S.E. of the city, are the PRINCE'S ISLANDS, a group of picturesque and beautiful hills, rising abruptly from deep water. They are nine in number, and are much resorted to in summer by the rayahs, or Christians of Constantinople.

ADRIANOPLE (or *Andrinople*, the *Ederneh* of the Turks), the first Ottoman capital in Europe, and now reckoned the second city of the empire, is situate partly on a hill and partly on the banks of the Tundja, at its confluence with the Maritza, in an elevated plain, 135 miles W.N.W. of Constantinople. It has now the appearance of desolation; the streets are covered with grass, and the houses seemingly deserted. The only objects of interest are the mosque of Sultan Selim II., which is regarded as the most magnificent temple of Islam, but built in the usual form, with a massy dome in the centre, and four very elegant minarets; and the bazaar of Ali Pasha, 300 paces long, and presenting a more striking appearance than any of the covered bazaars of Constantinople. Adrianople was built by the Roman emperor Adrian, from whom it takes its name; it is the residence of a British consul; and its population is vaguely estimated at 100,000. *Demotica*, on the Maritza, 30 miles S. of Adrianople, is a flourishing town of 15,000 inhabitants, the see of a Greek archbishop, and noted for its manufactures of fine pottery, silk, and wool. *Enos*, on the south side of a bay at the mouth of the river, has 7000 inhabitants, and may be considered as the port of Adrianople.

The other principal places in Roumelia are: *Philippopoli* (*Filibe* of the Turks), a large town with 30,000 inhabitants, 90 miles W.N.W. of Adrianople, and noted for its manufactures of silk, cloth, and cotton. *Tatar-bazardjik*, 23 miles W. of Felibe, on the great road from Belgrade to Stamboul, is a large town with 10,000 inhabitants. *Eski Sagra*, at the foot of the Balkan, in the midst of well-cultivated fields, has manufactures of carpets, and 18,000 inhabitants. *Kaisanlik*, in the defiles of the Balkan, has 10,000 inhabitants. *Idirno* or *Selimno*, near the important pass of the Irongate, 60 miles N. of Adrianople, has an important fair, and manufactures of woollen cloth, fusils, carbines, and rose water. Population 20,000. *Ouroundjora* is important for its trade and its fair, which is frequented by merchants from Asia Minor, Armenia, the Crimea, Russia, Germany, and Poland. *Kirkilisse*, 30 miles E. by N. of Adrianople, is the capital of a liva, and is inhabited by numbers of Jews, who furnish a great part of the butter and cheese consumed at Constantinople. *Gallipoli*, at the northern entrance of the Dardanelles, on the west side of the strait, is a large town, the capital of the eyalet of the Jezayrs, with 17,000 inhabitants, and a great trade. It is also noted for excellent leather. *Rodosto*, a large trading town on the north side of the Sea of Marmora. *Saloniki* (ancient *Thessalonica*), the most commercial city in European Turkey after Constantinople, is situate at the head or northern extremity of the large bay to which it gives its name. It is noted for its manufactures of leather, cotton, carpets, silk, copper, steel, and iron; it is the seat of a Greek archbishop, a grand molla, and the grand hakam of the Jews, a sort of high-priest of that people, who are here very numerous. Population about 70,000. *Ienidje Vardar*, west of Saloniki, is noted for its industry, and extensive plantations of tobacco; population 7000. In its vicinity are the ruins of *Pella*, the birth place of Alexander the Great. *Karaceria*, 35 miles W. of Saloniki, is noted for cotton and dye works, and marble quarries. *Vodina*, 46 miles N.W. of Saloniki, near or upon the site of the ancient *Edessa*, the first capital of Macedonia, and the burial place of her kings. It is now the see of a Greek bishop. *Serres*, a large town, a few miles west of lake Takinos, with manufactures of cotton, wool, and tobacco, is the centre of the cultivation and trade of cotton in European Turkey. *Orphano*, a commercial town on the bay to which it gives its name. *Drama*, a thriving town, with manufactures of calico and tobacco, 72 miles E.N.E. of Saloniki, in the vicinity of which are the ruins of *Philippi*, where was fought the great battle which decided the fate of the Roman world, 42 B. C. *Monastir* or *Eitoglia*, 95 miles N. by W. of Saloniki, a large town with 15,000 inhabitants, is the residence of the Roumeli-valiey, or master of the police of all Roumelia. *Kastoria*, 65 miles W. of Saloniki, on the west side of a beautiful mountain lake, is the the see of a Greek archbishop. Its vicinity is inhabited by the *Kastarrers*, a mixed race of Servian and Wallachian origin. In the valley of the Vardar: *Uskup* or *Scopia*, the capital of a liva, and the see of a Greek archbishop, is noted for its buildings, its fine situation, and its tanneries; population 10,000. *Kopvili, Kiupruli, Keupeurleu*, or *Keuprulu*, a small town of 4000 inhabitants, is noted for its stone bridge over the Vardar. *Istib* or *Istip* (ancient *Stobi*,) a small town noted for its iron and steel works. *Karatova*, a straggling town noted for an argentiferous copper mine,

and for the manufacture of copper vessels and utensils. In the upper basin of the Struma, or Karasu: *Kustendil* or *Ghiustendil*, a small town with sulphureous warm baths, and 8000 inhabitants, is the see of a Greek archbishop. *Dupinja* (*Dupnixza* or *Dobnitza*), in a high valley east of Kustendil, is noted for its iron mines; *Stromza* or *Strumnitza*, or *Ostroumja*, formerly noted for its fortifications, is now known only for its thermal springs; *Petrovich*, noted for excellent tobacco. *Melinik*, the see of a Greek archbishop. In the basin of the Morava: *Pristina* or *Piristina*, on the river Ibar, a considerable town with 10,000 inhabitants, is the residence of the inspector of the mines of Macedonia, and the see of a Greek bishop. *Kossova*, 10 miles N. by E. of Pristina, is a small town noted for two great battles gained by the Turks in 1389 and 1448, and for the monument of Sultan Murad I. who was killed there. *Novo Berda* is noted for the silver mines in its vicinity. *Vrana* is noted for its forges and manufacture of scythes and arms.

The gulfs of Contessa and Saloniki are separated by a large peninsula, the ancient *Chalcidice*, which subdivides into three, and projects far into the Archipelago. The most northerly of these is the celebrated Mount *Athos*, now called by the Greeks *Agion Oros*, and by the Franks *Monte Santo* (both names meaning *Holy Hill*). It forms a mountainous ridge 25 miles in length, and 4 in breadth, rising abruptly from the water; and having its lower parts covered with forests of oak, pine, and chestnut. Near the S.E. extremity, the summit reaches to the height of 6349 feet above the level of the sea, in N. lat. 40° 10′, and E. long. 24° 20′ 30″. From a remote period the mountain has been occupied by a number of Greek monks, who live in a sort of fortified monasteries, of which there are about twenty in the Peninsula. The ecclesiastics not only cultivate the ground, and plant vines and olives, but also rear vast numbers of bees, whose wax they export to a large amount, from the port of *Alrara*, on the east side of the Peninsula. The isthmus which connects the Peninsula with the continent is about a mile and a half across and only 15 feet above the level of the sea. It still retains traces of the canal dug through it by Xerxes, King of Persia, for the passage of his fleet, B.C. 480.

2. *Thessaly*. *Yeni-shehr* (ancient *Larissa*), a large town on the south bank of the Salambria, which, before the war, had a population of 30,000, and was one of the most flourishing towns in Turkey. It is noted for its manufactures of silk, cotton, leather, and tobacco, and for its red dye, is the centre of the trade of Thessaly, and the see of a Greek archbishop. It has a fine bridge of ten arches. *Trikhala, Tricala, or Tirhala*, 36 miles W. of Larissa, a considerable town, is the residence of the Pasha, governor of the province, and the see of a Greek bishop. To the westward are the defiles of *Agrafa*, leading into lower Albania, and the *Meteora* (high places), a series of monasteries built on scarped and isolated peaks, to four of which the ascent is made by a rope and basket. They are formed of natural caverns, or of chambers cut in the rock. The number was formerly 24, but is now reduced to ten. *Tournavos*, a small town, is noted for the manufacture of light stuffs, of silk and cotton tissue, known in commerce by the name of bourres de la Grèce. *Ambelakia*, in the vale of Tempé, is a large town with 6000 inhabitants, most of whom are employed in the manufacture of the red cotton thread, which is considered the best in Turkey. *Baba* or *Baba-hassan*, whose inhabitants are employed in the same branch of industry, but are exclusively Mahometans. *Pharsala* or *Sataljik*, 23 miles S. of Larissa, is memorable for the victory gained by Cæsar over his rival Pompey; and is still important for the industry and trade of its inhabitants, who amount to 5 or 6000. *Zagora*, a village near the sea, is noted for the cultivation of silk: it formed, or still forms, a sort of republic, governed by its own laws, and acknowledging only the authority of the Sultana Validi. *Volo*, a small town, which gives its name to a gulf, and represents the ancient *Demetrias*. *Tikeri* or *Trikiri*, a small town with a fine harbour, at the entrance of the Gulf of Volo. Due north of Larissa, about 30 miles distant, is the celebrated Mount *Olympus*, now called *Elymbo* or *Olympo*, also *Lacha* or *Lakha*, a giant mass, which rises with two peaks, named St. Stephano and St. Elias, to the height of 9754 feet above the level of the sea, in N. lat. 40° 5′ and E. long. 22° 21′. The ridges forming its southern base are separated from the ridges of *Œta*, by the vale of *Tempé*, a deep gorge, through which the Salambria has forced its way to the sea.

3. *Albania*. IOANINA, IANINA, YANINA, or YANIA, a large well-built town, occupies a picturesque situation on the western side of the large mountain lake to which it gives its name. It is an open town, but commanded by two strong citadels, the one of which occupies a peninsula in the lake, and the other, named Litharitza, a scarped rock in the centre of the town. Ioanina is celebrated in modern times as the residence of Ali Pasha, the Vizier of Albania, under whose rule it attained a great degree of prosperity, and a population of 30,000; but these are now reduced to a few thousand Albanians and Jews. The other principal towns of Southern Albania are: *Mezzovo, Konitza, Premithi*, and *Klissura*, noted for their fortifications; *Argyro-Castro* or *Ergir-Kastri, Delonia, Delbino* or *Delvino, Philates* or *Philoti, Paramithia, Souli*, so celebrated for the long struggle of its inhabitants, the Suliotes, against Ali Pasha; *Arta, Salagora; Preresa*, at the entrance of the Gulf of Arta, and near the site of the ancient *Nicopolis*, built by Augustus to commemorate his victory at Actium; *Parga, Butrinto, Chimera* or *Kimera*. In Middle Albania: *Avlona* or *Valona*, with a good harbour, *Tepelene*, the birth-place of Ali Pasha, *Ducates*, the chief town of the numerous Albanian tribe of Japys, *Berat* or *Arnaout Beligrad, Elbassan* or *Ilbassan, Durazzo* (ancient *Durrachion* or *Dyrrachium*), a small town with a harbour on the Adriatic. In Upper Albania: *Ochrida* or *Ochri*, a considerable town on the north side of a large mountain lake, drained by the river Drin; *Dukagin*, the capital of a liva; *Perzerendi, Prizrendi* or *Perzerin; Alessio, Alise* or *Lesch*, a considerable town with a harbour, at the mouth of the Drin, and containing the tomb of the famous Scander-beg; *Croia* or *Ak-Serai*, whose castle, now demolished, was Scander-beg's residence; *Scutari* (*Iskanderi* of the Turks, *Scodrr* of the Albanians, *Scodra* of the Illyrians), a large, fortified, and flourishing town, at the south end of a large lake, in the bottom of a warm valley, with a population of 20,000; *Dulcigno* (Turkish, *Olgun*), a small seaport, formerly the resort of corsairs or pirates, who infested the Adriatic; *Antirari* (*Tivari* of the Turks, *Bar* of the Illyrians), a seaport town, with 6000 inhabitants, and a considerable trade in salt and oil.

4. *Bulgaria*. SOPHIA (*Traditza* of the Bulgarians), a large town, situate in the midst of high mountains, between the rivers Isker and Nissava, 300 miles W.N.W. of Constantinople, on the high road to Servia, with celebrated baths, and 46,000 inhabitants. *Ichtiman*, a small town at the entrance of the famous pass of the Balkan named *Soulu-Denbend* or *Trojan's Gate*, from the remains of a gate attributed to that Emperor. *Samakof*, a small town in a high valley, noted for its mines and flourishing works in iron; in the vicinity of which is the defile named *Kiu-Derbend* (Girl's Pass), 35 miles N.E. of Sophia. *Bergoracz* or *Berkofja* is noted for a rich silver mine, 48 miles N. of Sophia. *Mustapha-palanka*, and *Nizza* or *Nissa*, both noted for their fortifications, in the valley S.W. of Sophia. *Shumla* (*Schoumna* or *Choumla*), a large town 110 miles N. by E. of Adrianople. Is distinguished for the industry and commerce of its inhabitants, who amount to 18 or 20,000. It is situated in the centre of a convexity or rent of the chalk beds which occupy this part of Bulgaria, and which have been mistaken by geographers for offsets of the Balkan. It contains a citadel and redoubts on the chalk hills, which have enabled the Turks more than once to make an obstinate defence, and to prevent the passage of the Russian armies in this direction. *Rutshuk*, a large fortified town on the south bank of the Danube, with a population of 30,000 Turks, Greeks, and Armenians, who carry on a considerable trade with Vienna in indigo, corn, and cloth. *Silistria* or *Dristra*, a large fortified town on the Danube, with 20,000 inhabitants. Its fortifications were completely repaired and extended by the Russians, who kept possession of it for several years after the peace of Adrianople, in 1826, as a key to Turkey; but a late traveller (*Spencer*) calls it "an ill-fortified town, now in a more

ruinous state." *Nicopoli*, on the Danube, a fortified town, occupies a picturesque situation, partly on the brow of a range of chalk cliffs, and partly in a narrow valley. Population 10,000. *Sistova* (*Sestov* or *Schstab*), a large town of 20,000 inhabitants, on the Danube, with tanneries, manufactures of cotton, and a flourishing trade. *Widdin* or *Vidin*, a large fortified town, also on the Danube, with 20,000 inhabitants, and considerable trade. In eastern Bulgaria are: *Bazardjik* (Little Market), a small trading town in an important position; *Varna* or *Warna*, on a small bay of the Black Sea, a fortified town, which defied the Russian arms, till lost in the late war by the purchased treachery of its governor, Yusuf Pasha. *Nassova* and *Hirsova*, both on the Danube; *Iskchi*, midway between Ibrail and Ismail, where the Russians used to place their pontoons for the passage of the river in their wars with Turkey; *Toultcha*, a fortified town at the separation of the Sulinian and Georgieffian arms of the Danube. To the south and east of Shumla, *Karnabat* and *Pavarradi*, places rendered important by their position on the great military roads through the defiles of the Balkan; and Demir-kapi (the Iron Gate), a celebrated defile leading from Islivno in Roumelia, to Stareka in Bulgaria.

5. *Bosnia*, *Croatia*, and *Turkish Dalmatia*.—BOSNA-SERAI (*Serajevo* in Illyrian), a large town on the Migliazza or Miliaska, an affluent of the Bosna, stands on an elevated plateau, surrounded with woody mountains. It is inclosed by walls 12 feet thick, and the upper city is defended by small forts. The town contains a palace built by the Sultan Mohammed II., numerous mosques and baths, and about 70,000 inhabitants, who not only carry on a great trade, but also manufacture, to a large extent, military arms, metal plates, iron and copper utensils, goldsmith work, wool, cotton, and leather. It is the head-quarters of the principal hereditary captains who govern Bosnia under the Sultan, whose vizier a Pasha of three tails, resides at *Travnik*, a small town, with a citadel and 8000 inhabitants, 50 miles N.W. of Bosna-Serai. In the immediate vicinity of the latter are the baths of *Serajevska*, and a few miles further to the north and north-west, *Varesch*, *Visoko*, and *Kressero*, small places, noted for their forges and iron mines. The other principal places of Bosnia are: *Vraduk* and *Maglai*, towns on the Bosna, with strong citadels; *Fointza*, a village near Travnik, with rich iron mines; *Tuzla*, noted for its rich salt springs; *Srebernik*, the capital of a sandjak; *Zwornik* or *Isvornik*, a large town with 14,000 inhabitants, and lead mines in its vicinity; *Jaicza*, a small town, with a citadel, and a nitre manufactory, and formerly the residence of the Catholic kings of Bosnia; population 2000; *Baniabouka*, a large, busy, and commercial town on the Vertas, with 15,000 inhabitants, is one of the principal fortresses of Bosnia. In Croatia are: *Bihacz* and *Novi*, small fortified towns on the Unna; *Kamengrad* and *Starai Maidar*, noted for their forges and iron mines, and also for a silver mine at the former. *Behir* or *Ottotcsan Gradisca*, and *Brod*, fortified towns on the Save. In Dalmatia: *Mostar*, on the Narenta, a small fortified city, with 000 inhabitants, and noted for a bridge of a single arch of 300 feet span; *Lirno*, a town with 4000 inhabitants, on the great road from Austrian Dalmatia to Bosnia, which renders it a place of considerable trade; *Trebigno*, a fortified city, the see of a Catholic bishop, with 10,000 inhabitants.

6. SERVIA, formerly a province of the Turkish empire, is now a sovereign principality, acknowledging the supremacy of the Sultan, and paying a tribute. It has an area of about 12,000 square miles, and 380,000 inhabitants. In the beginning of the present century, Czerny-Georges, a Servian in the service of Austria, formed the design of freeing his country from the Turkish yoke, and raised an insurrection, which was continued for several years, till he was taken and beheaded by the Pasha of Widdin. After his death the war was still continued; but at length the Turks, finding it beyond their power to reduce the rebels, agreed to resign Servia to a native governor, who should have the management of its internal policy, while the Sultan should still controul its external relations. Milotsch Obrenovitsch, a man who had risen to distinction during the troubles, was chosen prince by the chiefs of the nation assembled at Kragojevacz, whose election was confirmed by the Sultan, and the dignity guaranteed to him and his heirs; but he has been deposed by the senate, and the government seems to be at present in a very unsettled state. The country is nevertheless said to be improving with silent but astonishing rapidity, and to have already made immense progress in public instruction, administration, order, and industrious activity. The only town of any importance is *Belgrade*, at the confluence of the Save and the Danube, and on the right bank of the latter river. It is a large but decayed town, presenting a most picturesque appearance, from the number of its domes and minarets peering from among the dark cypresses with which they are surrounded. The town is inclosed with half-ruinous walls, gates, and towers, and has a citadel built on a bold promontory, once considered the bulwark of Turkey on this side, but now completely neglected and falling to decay. It has a Turkish garrison, and a Pasha dependent on the Vizier of Silistria. The seat of the Servian government is sometimes at Belgrade, and sometimes at *Kragojevacz*, 75 miles to the S.E. *Semendria*, the former capital of Servia, has fallen completely to ruin. *Gladova* or *Scala Kladova*, a very small and miserable Wallachian town, in the north-eastern corner of Servia, is only remarkable as the place where the navigation of the Lower Danube commences below the Irongate. In its vicinity are the remains of the bridge erected across the Danube by the Emperor Trajan, to facilitate the subjugation of Dacia, now consisting only of a solid shapeless mass of masonry on each side, and of 13 pillars or piers in the bed of the river, which are visible at low water. The distance between the two abutments is 3900 feet. Higher up the river is a small island containing the fortress of *New Orsova*, belonging to the Turks. *Hassan Talanka*, 12 miles S. of Semendria, a small fortified town. *Kruschevacz* or *Alajahissar*, nearly in the middle of Servia, is the see of a Greek bishop, and has a castle where several sovereigns of Servia have resided. *Schabacz*, a small fortified town on the Save. *Novi Bazar*, or *Ieni Bazar* (Newmarket), a large fortified town, with 7 or 8000 inhabitants, is the chief town of the district of Rascia. *Misvi* is a fortified town, with 4000 inhabitants, and the see of a Greek bishop.

7. WALLACHIA extends along the north side of the Danube, from New Orsova to the mouth of the Sereth, and northward to the Carpathian mountains, which separate it from Transylvania. Its greatest length is about 275 miles, and its greatest breadth 150; the superficial area is about 30,000 square miles, and the population amounts to 950,000. This province, and Moldavia were, till lately, ruled by governors, with the title of Hospodar, chosen from the Greeks of Constantinople, and vested with regal authority; the choice, however, was determined by purchase. By the treaty of Bukharest, in 1812, the Russian Czar acquired the right of interfering in matters connected with the religion of the people, and in cases of outrages committed by Turkish officers against the Christian subjects in the principalities; and by the treaty of Adrianople, in 1829, this power of interference was so greatly extended, that they are now completely under the controul of the Czar, and little else than Russian provinces. To the Sultan they pay a small annual tribute, and he still appoints the Hospodar for life, from a list of nominees presented by the boyars or nobles, and prepared of course at the dictation of Russia. The government, however, is of the worst possible kind; every department is in miserable disorder; the people are divided into two classes of tyrants and slaves; and the country is ill cultivated and thinly inhabited by a wretched population. *Bukharest*, the capital, is a large town with 80,000 inhabitants, situate on the navigable river Dombrovieeza, in an extensive marshy plain. It has few or no manufactures, but a considerable trade. The other remarkable places are: *Tergovist*, formerly the capital, but now almost in ruins, with a population reduced from 30,000 to 5000; *Ployesti*, a large town, with a well frequented fair; *Waleni* and *Kimpuria*, frontier towns north of Bukharest, with custom-houses, and noted for the rock salt which is dug at *Slanikal* near the former, and at *Okna-*

Teleaga near the latter; *Giurgewo*, a commercial town, composed chiefly of huts, on the left bank of the Danube, opposite Rutshuk; *Ibrail* or *Braiow*, on the left bank of the Danube, 15 miles above the mouth of the Sereth, was once a fortress of some celebrity, though now demolished; but a new town is rising out of the ruins, and the inhabitants carry on a very considerable trade in exporting raw produce. To the west of Bukharest are: *Ardjisch* or *Kurtea d' Arjish*, a small town, noted for a monastery, the church of which is considered the finest in Wallachia. It stands on the great road to the Rothen-thurm pass, leading through the mountains into Transylvania. *Krajova*, a small but regularly-built and flourishing commercial town, with 8000 inhabitants. *Iglas*, a small commercial town above the confluence of the Alouta with the Danube. *Rimnik*, a small town on the Alouta, near the northern frontier, with a very rich salt mine, that of *Okna-mare*, in its vicinity.

8. MOLDAVIA adjoins Wallachia to the north-east, being separated from it by the river Sereth and its affluent the Milkov; and is bounded on the east and north by the river Pruth, which divides it from Bessarabia, and on the west by Transylvania and the Buckowine. Its extreme length is 220 miles, and its extreme breadth 110; its area 16,000 square miles, and the population 450,000. The government is exactly on the same footing as that of Wallachia, and the country is as ill governed, and in an equally wretched state. The principal towns are: IASSY, the capital, a large town, with 40,000 inhabitants, situate on a height near the river Bachliu; *Galacz* or *Galatz*, a large wooden-built town on the Danube, may be considered as the port of both principalities. It is said to contain already 20,000 inhabitants. It carries on a great trade, chiefly in exporting the raw produce of the country, as tallow, harricot beans, corn, cheese, barrel staves, wax, flax, hemp, wool, bestial, skins and hides, wine, &c. The principal articles of import are iron, olives, cotton, sugar, and coffee. Vessels of 300 tons come up to the quay. *Niamtz*, near the north-western frontier, is noted for its picturesque situation and a large monastery, containing an image of the Virgin in massive silver, which is visited annually by great numbers of pilgrims. *Okna*, 98 miles N.W. of Galacz, in a valley with rich salt mines, whose productiveness rivals the best in Europe.

9. CANDIA (*Kriti* or *Kirid* of the Greeks and Turks, the ancient *Creta* or *Kreté*), is a large island, forming the southern limit of the Archipelago, about 160 miles long, varying in breadth from 6 to 35, and containing an area of 3200 square miles. It is almost wholly covered with rugged and barren mountains, which increase in elevation towards the west, where they are snow-capt even in June. *Ida*, now *Psiloruti*, the loftiest peak, rises in the centre of the island to 7674 feet above the level of the sea. The mountains abound with grottoes and caverns, one of which, at the foot of Mount Ida, answers in essential particulars to the ancient accounts of the famous labyrinth. The mountains are clothed with woods of oak, chestnut, walnut, and pine; the plane, cypress, myrtle, wild olive, vine, carob, aloe, arbutus, Indian fig, and many fine fruits and vegetables, grow spontaneously; and the ground is covered with aromatic herbs. The wild boar, wolves, and goats are met with in the forests; game is plentiful; birds of prey are numerous; and reptiles are few. The chief productions are, oil, silk, wine, raisins, carob, valonia, wool, oranges, lemons, wax, honey, linseed and almonds, cotton, flax, &c. The pastures are good, and cattle abundant, but the exportation of them is prohibited; wheat, barley, and oats are grown, but not in sufficient quantity for home consumption. The manufactures are few and inconsiderable; the principal article is soap, of which there are 24 works, producing annually about 3000 tons. The roads are nearly impassable, even for mules. Population, in 1839, 158,000, of whom 100,000 were Greeks and 44,000 Turks. Crete has been possessed for several years by the Pasha of Egypt, but is now restored to the Sultan. The principal towns are *Candia*, *Retimo*, *Khania* or *Canea*, and *Splakia*. There are several small islands along the coasts, the principal of which are *Stan-diu*, opposite Candia, and *Gozo*, on the south-west coast.

As further illustrative of Turkish Geography, the explanation of the following list of words of frequent occurrence may be useful.

Aghach, or **Agadj**, *a tree*.
Ak, *white*.
Altun, *golden*.
Bactche, or **Bagtché**, *a garden*.
Bala, *upper*.
Balkan, *a chain of hills*.
Bashi, *a head*.
Bazaar, *a market*.
Bendt, *a reservoir*.
Bournu or **Burun**, *a cape*.
Bunar, *a spring*.
Buyuk, *great, large*.
Chai, *a river*.
Dagh (Tagh), *a mountain*.
Davan, *a mountain-pass*, or *range of mountains*.
Demir, *iron*.
Denghiz or **Dengis**, *a sea*, or *lake*.
Derah, **Dereh** or **Deré**, *a valley*.
Deir, *a convent*.
Diyar, *tents*.
Egri, *crooked*.
Eski, *old*.
Ghieul, gheul, gol or **kol**, *a lake*.
Grada, Grade, *a fortress*.
Gumish, *silver*.
Hissar or **Ilisar**, *a castle*.
Ieni or **Yeni**, *young, new*.
Illjah, *hot springs*.
Jik, *sign of diminutive*.
Kaleh, *a castle*.
Kapi or **Kapousi**, *a gate*.
Kara, *black*.
Kasbah, *a market-town*.
Khanah, *a house*.
Keban, *a gorge, a pass*.
Kelisch or **Kelisah**, *a church*.
Keui, kieui, kioy, koi or **kul**, *a village*.
Kizil, *red*.
Koom, *sandy plains, deserts*.
Koulassi, *a tower*.
Kopri or **Kupri**, *a bridge*.
Kutchuk, *little*.
Liman, *a bay*.
Maden, *a mine*.
Menzil, *an inn*.
Oosek, *high*.
Ovah, *a plain*.
Palanka, *a stockade*.
Phanar or **Fanal**, *a light-house*.
Planina, *a chain of hills*.
Sari, *yellow*.
Seral, *a palace*.
Shehr, *a town*.
Skellessi, *steps, a landing-place*.
Sou or **Su**, *a water*, or *river*.
Tel, *a mound*.
Tuzlah, *a saltern*.
Yeni, *young, new*.
Yeshil, *green*.

Elis, on the west, and Achaia, on the north coast of the Morea, are in general hilly, with numerous small river valleys, but rather dry. The Cyclades and the other islands in the Archipelago are almost all steep and rocky; Eubœa is traversed throughout its whole length by a ridge of hills, and is separated from the mainland of Eastern Greece, by a very long channel or strait, so narrow at the middle as to be spanned by a bridge.

The mountains which cover so large a portion of Greece are partly wooded, and partly naked; the woods are more abundant on the west side, and less frequent on the east. The low country susceptible of tillage probably does not amount to two-fifth parts of the surface, and not more than a twelfth part of it is actually under cultivation. It is generally bare of wood; and the want of inclosures, the profusion of weeds and brushwood, the thinness of the population, and the ruinous condition of the few cottages, combined with the crumbling remains of the noble structures of antiquity, give it a deserted, desolate, and melancholy aspect. Towards the end of summer, the hills and fields appear parched; yet Greece combines in the highest degree every feature essential to the finest beauties of landscape, with the exception of large rivers; and travellers of taste have wanted words to describe the magnificence of the views which it affords. It is the combination of its towering mountains and rich sheltered plains, with so many spacious and beautiful inland seas and bays, broken by headlands, encircled by mountains, and studded with islands, that makes Greece surpass in picturesque beauty every other country in Europe, and perhaps in the world. The effect of such scenery, aided by a serene sky and a delightful climate, on the character of the Greeks, cannot be doubted. "Under the influence of so many sublime objects, the human mind becomes gifted as by inspiration, and is by nature filled with poetical ideas." Greece consequently became the native country of taste, science, and eloquence, the chosen sanctuary of the muses, the model of all that is graceful, dignified, and grand in sentiment or action.

CLIMATE.—The climate is variable in character, but generally very mild; the winter, indeed, is so temperate, that it frequently passes over without any frost. In ordinary winters the thermometer rarely falls below the freezing point; and during the greatest cold it never falls more than 6° or 8° below it. Snow is scarcely ever seen on the low plains; on the loftier mountains it generally begins to fall about the middle of October, but the summits are not permanently covered till the latter part of November. The summer's heat is considerable and is continued; almost every year it attains its maximum of 104°; but this high temperature does not continue for more than one or two days. In July and August the heat almost daily exceeds 86°; and, as the nights at this season are not cool, and there being scarcely any rain to refresh the air, the heat would become nearly intolerable, were it not for the sea-breeze which sets in generally before noon, and produces so powerful an effect, that there is occasionally more heat at seven or eight o'clock in the morning, than at mid-day, when the wind is blowing. Rain seldom falls in summer; from the first of July till the first of October, an extraordinary dryness prevails; and it often happens that there is not a single day's rain in July and August. Autumn, winter, and the beginning of spring constitute the rainy season; but the heaviest rains fall at the end of autumn and the beginning of winter. December and February are usually the most stormy months; January is often very fine. Storms in summer are of rare occurrence, except in mountain districts; the season for tempests is the close of autumn and the beginning of winter; but it cannot be said that storms are frequeut. Hail is scarcely known. Clouds are seldom seen in summer; and it is not unusual for a whole month to pass without a cloud, except on the loftiest mountains; and even there they are infrequent. Mount Delphi, however, and St. Elias in Eubea, are almost constantly covered with clouds. During summer, the wind frequently blows from between the north and the east for fifteen days together, or even a month; it is warm, and seems to occasion disease. The south winds, on the contrary, are refreshing and salubrious. The wind is often very strong at Athens; and during the heat of summer it blows the dust and sand even into the houses, and walking is rendered very disagreeable. Earthquakes are common in the season of the violent rains; but they are usually very slight, and are sometimes scarcely felt. At Athens, during the three years 1833-4-5, there were the average number of 87 days of rain, and eleven in which there were storms. The mean temperature was 60½°. *(Climat de la Grèce; par M. Peytier, Bulletin de la Societé de Geographie; Juin* 1837.) But the local diversities of the country have a great effect in modifying the characteristics of the climate; M. Peytier's observations apply chiefly to Attica and the eastern districts of the Morea. In Attica, which, being freely exposed to the sea-breeze, has somewhat

of an insular climate, the winter sets in about the beginning of January. About the middle of that month snow falls, but is seldom seen for more than a few days. Gentle rains fall about the middle of February, after which spring commences. In the beginning of March the vines and the olives bud, and the almonds are in blossom; in May the corn is reaped. In the interior plains and valleys, which are encircled by mountains, and cut off from the direct influence of the sea, the winters are much colder, while the summers are comparatively warmer. At Tripolitza, in Arcadia, the snow has been found 18 inches thick in January, with the thermometer at 16° Fahrenheit; and it sometimes remains on the ground for six weeks. In Bœotia likewise, it sometimes lies for several weeks to a great depth; while the summer is there hotter than in Attica. The coolest weather in all parts of Greece is accompanied by a north-east wind; the north and north-west winds are serene and dry. The zephyr or west wind is famed for its balmy softness; the south-east, south, and south-west winds are all humid, and the east wind still retains its character of a morning breeze, as described by Aristotle. The siroccо is sometimes felt, blowing from the south-east, and producing its usual effects on the human constitution, a feeling of oppression, a dull headache, with general lassitude, and uneasiness in the limbs. There are few diseases peculiar to Greece; but the country suffers greatly from malaria, which prevails chiefly in August and September, and produces fevers; even Attica, though it possesses a dry soil, is not exempt from this infliction. These fevers occurring frequently, destroy the constitution, and produce goitres and scrofulous diseases. Coughs, catarrhs, and apoplexies are prevalent in some districts; and elephantiasis and leprous affections are more common than in other countries. The plague occurs at irregular periods, and has sometimes made great ravages. (*Holland, Hobhouse, Clarke, Pouqueville*, &c.)

Soil and Vegetation. — The most common cultivated products, are wheat, barley, maize, and rye; oats in small quantity; rice in marshy spots; mullet, peas, beans, tares, sesamum, anise, cotton, and tobacco; and, notwithstanding the most wretched system of agriculture, the produce is large. The most fertile districts are the plains of Bœotia, Sicyon, Argos, Messenia, and Arcadia. In Arcadia wheat yields twelve for one; in Argos, ten; at Eleusis, twelve. The produce of good soils, in favourable seasons, is generally estimated at ten or twelve for one; and that of the best soils, in very favourable seasons, from fifteen to eighteen for one. The soil of Attica is too light for wheat; and consequenely barley, as in ancient times, is the prevailing crop. Cotton is cultivated to a considerable extent, principally in Bœotia and the Morea, and is a more profitable, but more precarious crop than corn, as it requires clear sunshine, copious dews, and light rains, to make it succeed. Tobacco is cultivated only to a small extent. The olive is cultivated throughout Greece; but that of Attica is still distinguished, as in ancient times, by its superior excellence. It requires a dry soil, a sheltered situation, and a warm exposure, and therefore is not adapted to the rich moist plains of Bœotia and Thessaly. Vines are cultivated on a small scale; but the wines have an unpalatable harshness, owing to the resin and the lime which are mixed with them. The Corinthian grape or currant is almost peculiar to the Morea and the Ionian Islands; it is found in the greatest perfection along the southern shores of the gulf of Lepanto, on some points of the opposite coast, and in Cephalonia, Ithaca, and Zante. It succeeds best in plains near the sea, with a western exposure, and prefers a dry, light soil. Madder grows wild in abundance, and is cultivated in Bœotia. The mulberry-tree has become an object of increasing importance, and the produce of silk is considerable. The fruit-trees which grow in the fields and gardens, besides the vine and the olive, are the almond, pomegranate, orange, lemon, citron, banana, fig, peach, apricot, quince, plum, and others of a more common kind. The date-tree grows, but does not bear fruit. The melons, water melons, and gourds are excellent, and form a considerable part of the subsistence of the inhabitants. Their culinary vegetables, of which they have no great variety, are spinage, artichokes, cabbage, cauliflower, carrots, beans, lettuce, and celery. The forests produce the oak, kermes-oak, cork-tree, pine, larch, ash, plane, aloe, wild olive, sweet chestnut, the manna-ash, the turpentine-pine, various dye-woods and plants, and a vast variety of flowers and aromatics.

Animals. — The wild animals are the bear, wolf, lynx, cat, boar, stag, roebuck, goat, badger, marten, fox, weasel, jackal, hare, and hedgehog. The bears are rarely seen, but the wolves are numerous; and to guard the flocks and cattle from their ravages, dogs of a fierce and powerful breed are kept. Hares are very abundant, but are not much hunted. Of birds, there are very large vultures, various kinds of falcons and owls, the cuckoo, roler, kingsfisher, ducks of several sorts, the domestic goose and

turkey, storks, partridges, pigeons, quails, snipes, teal, blackbirds, goldfinches, nightingales, boccaficas, swallows, martins. Greece, as it abounds in mountains covered with herbage, is eminently a pastoral country; and the management of sheep is better understood than any other branch of rural economy. The modern breeds of sheep, however, have declined much from the ancient in beauty and value. The mutton is but indifferent, the wool is of inferior quality, and the weight of the sheep is only from thirty to fifty pounds. The flocks of Arcadia and Hellas, especially those which feed on Parnassus, are considered the best. A black-woolled breed is very common. As in Spain, the flocks migrate, at the approach of winter, from the inland mountains to the low valleys near the sea, and return to the hills in April. Goats are also numerous, and are shorn along with the sheep. Beeves are less abundant; the oxen are chiefly used for labouring, and the cows for breeding; and as both the Greeks and Turks prefer mutton to beef, the number of sheep killed is incomparably the greater. In all parts of the Morea, buffaloes, which are handsome animals with fine skins, are used in husbandry, and, when unfit for labour, are killed for food. The horses of the Morea are little to be admired for their beauty, but are active, vigorous, and sure-footed; asses are numerous, but diminutive in size; and mules are used as beasts of burden. Bees are objects of considerable attention. Honey is everywhere abundant; that of Hymettus in Attica still maintains its ancient pre-eminence, and is there produced in great abundance. Silk worms are also becoming an object of increasing importance; and the produce of silk is already considerable. The country is infested by troublesome and even noxious insects, more particularly in the low plains, and during warm weather. The seas, lakes, and rivers abound with a variety of fish, and seals are found on the coast.

PEOPLE. — The dominant race are the HELLENES, whom all Europeans concur in calling GREEKS. The Hellenes claim to be the descendants of the ancient people who rendered this country so illustrious by their writings, their deeds of valour, and their cultivation of the fine arts; but they have unquestionably received a large proportion of barbaric blood, particularly by intermixture with the Sclavonians. They are a rude and unenlightened people, with all the vices of slaves, and few redeeming virtues; but they are ingenious, active, enterprising, and restless; and, now that they have recovered some degree of national independence and civil liberty, they may be able to turn their talents to account in acquiring a portion of the civilization and learning of Western Europe. Their language is the *Romaic*, so called from the word *Romaioi* or Romans, a name which they assumed, or acquired, during the period of their subjection to the Roman Empire of Constantinople, and from which their Turkish name *Roumi* is also derived; but they have now abjured it, and resumed the ancient names of *Hellenes* and *Hellas* as the proper designations of themselves and their country. The Romaic bears a much closer resemblance to the Hellenic, or ancient Greek, than the Italian does to the Latin; and it has even been said by a very distinguished modern Greek scholar that if we take the Attic as a standard, the ancient Doric differs as much from it as the present living dialect. (*Encyc. Brit., art. Greece*, p. 741.) The Hellenes all belong to the Greek Church, which is one of the most corrupted branches of Christianity; but having no sovereign pontiff, and no decrees of infallible councils to obstruct it, it is more susceptible of amendment than the Catholic Church of the West. The priests freely admit, and are thankful for the Bible. This circumstance, together with the general progress of unfettered education, will no doubt soon be productive of the happiest effects upon the present character of the Hellenic nation, which, at best, is rather equivocal.

The *Arnauts* or *Albanians* are very numerous; of whom colonies or parties have settled from time to time in various parts of Hellas. Nearly all of them belong to the Greek Church; and they have, with few exceptions, preserved their national manners, dress, and language, though many are likewise able to speak Romaic. They chiefly inhabit Attica, Bœotia, Phocis, Argolis, and the islands of Hydra, Spezzia, Coulouri, and Andro; but have also several villages in Arcadia, Achaia, and Messenia. In the rest of the Morea, in all the other islands, in Etolia and Acarnania, a great part of Thessaly, and Lower Macedonia, the population is exclusively Greek. The *Mainotes*, who inhabit the ridges and valleys of Mount Taygetus, in the peninsular promontory between the gulfs of Kolokythi and Koroni, boast of their descent from the ancient Spartans; and the histories of Leonidas and Lycurgus, who are represented partly as saints and partly as robbers, still figure in their popular traditions. They are a wild and lawless race, living under a sort of patriarchal feudal government exercised by hereditary chiefs, and seem to be really the descendants of the free Laconians,

terranean, but also with more distant countries. Their exports consist principally of raw produce, as cotton, corn, tobacco, olive oil, timber, wool, silk, honey, currants, figs, hides, dye-stuffs, drugs, with some wine, cheese, butter, live-cattle, capots or cloaks, coarse woollens, and a few slight fabrics of silk and cotton. The imports from western Europe consist of manufactured goods, colonial produce, and peltry; from Turkey, coffee, flax, timber, rice, drugs, and some manufactured articles. There are in the country no roads, in the English sense of the word; and the transport of goods and travellers is effected on the backs of horses, asses, and mules.

CITIES, TOWNS, and REMARKABLE PLACES.—ATHENS, the capital of the kingdom, and one of the most celebrated cities in the world, is situate in the province of Attica, about five miles from the coast of the north-eastern side of the Gulf of Egina, in North lat. 37° 58′, and East long. 23° 46′. It is built in a plain surrounded by hills, and watered by the rivers Cephissus and Ilissus; and has been almost entirely rebuilt since 1834, when it became the seat of Government. New streets have been laid out, the old streets levelled and widened, and many houses erected in the modern style; but most of the town still consists of narrow winding lanes, with mean, clay-built houses. The principal public buildings are the royal palace, a large new structure of Pentelic marble; the mint; the royal stables; a military hospital, and a barrack. The population already exceeds 17,000, of the most heterogeneous description of persons of all nations. Athens is the seat of a university, and has a gymnasium, a high school, and other institutions for education. Great efforts have been made to secure the public health, by clearing and repairing the ancient sewers, and draining the marshes which have been formed by the rivers. The antiquities of Athens are, however, still the principal object of attraction. The ancient *acropolis*, or citadel, is built on a rocky eminence rising abruptly from the plain, and contains within its walls the remains of the Parthenon, the glorious temple of the tutelar deity and name-mother of the city, the virgin goddess Pallas-Athené; and another temple, almost entire, of the same goddess in her character of *Iolias*, or protectress of the city; a beautiful Ionic structure, connected with the temples of Erectheus and Pandrosus. The entrance to the acropolis is at its west end, which was once adorned with a splendid gateway, called the Propylæa, of which several portions still remain. Beyond the gate was a small temple of Victory, the fragments of which have been recently discovered under ground, and the building completely restored. In the lower town is the temple of the demigod Theseus, built after the year 469 B.C., when his bones were brought to Athens from Scyros, by Cimon the son of Miltiades. This is a Doric peripteral building, perfectly entire, except the roof, which has been recently restored; it is now converted into a museum or receptacle for antiquities. There are also the temple of the Winds, an octagonal tower, with figures of the winds on its sides; the monument of Lysicrates, called also the lantern of Demosthenes; the tribunal of the Areopagus; the Pnyx, or place of public assemblies; the ruins of the temple of the Olympian Jupiter, &c. Five miles from the city is the harbour of *Porto Leone* (ancient *Piræus*), where several large houses have been built, and some good streets lined with low but respectable houses. The harbour consists of a land-locked basin, with a narrow entrance, but with very deep water inside, and is large enough to accommodate a great number of heavy ships. The government are erecting a pier for extending the accommodation for vessels. The communication between Athens and the Piræus is formed by an excellent road, and omnibuses ply between them at all hours. On the adjoining promontory are the remains of the tomb of Themistocles. Twenty miles N.E. of Athens, are the village of *Marathona*, and the plain of *Marathon*, so celebrated for the victory gained there by the Athenians over their Persian invaders, B. C. 490; and 25 miles S.E. is Cape Colonna, the ancient *Sunium*, containing the remains of a temple of Pallas-Athené, from which the Cape derives its modern name of *Colonna* (pillar-cape). In the gulf westward of Athens is the island of *Salamis* (modern *Coulouri*), in the strait between which and the mainland was fought the great naval battle between the Greeks and the Persians in the year 480 B. C. On the coast of the gulf behind Salamis is the village of *Lepsina*, containing the ruins of the temple of the goddess Demeter (called by the Romans *Ceres*), where were celebrated in ancient times the Eleusinian mysteries. Westward from Lepsina, and also near the coast, is the ancient *Megara*, which was burned and demolished by the Greeks and Turks, during the late war, and is now little better than a mass of blackened ruins.

Lebadea or *Livadia*, the chief town of Bœotia, is situate on the summit of a rock, at the source of the river Hercyna, 50 miles N.W. by W. of Athens. It contained in the time of the Turks about 1500 houses. In the S.E. part of Bœotia are *Thiva* or *Thebes*, a poor village, on the site of the ancient *Thebæ*, the city of Pindar, Pelopidas, and Epaminondas, of which scarcely a vestige remains; and *Kokla*, the ancient *Platææ*, now untenanted. About 40 miles N. by W. of Livadia, is the famous pass of *Thermopylæ*, a narrow defile between Mount Œta and the sea, leading from Phocis into Thessaly. *Castri*, 30 miles W. of Livadia, represents the ancient *Delphi*, so renowned for the temple and oracle of the god Phœbus-Apollo. *Talanti* or *Talanta*, 22 miles N.N.E. of Livadia, an episcopal city, with 5000 inhabitants.

In Western Hellas the only places worthy of notice are Lepanto and Missolonghi. *Lepanto*, called also *Nepakto*, and by the Turks *Ainabakhti*, the ancient *Naupactus* or shipbuilding-place, is a small fortified archiepiscopal city, with a harbour on the north side of the Gulf of Lepanto, near the entrance, and a citadel crowning the top of the hill, on the slope of which the town is built. *Missolonghi*, on the north side of a bay or lagoon of the Gulf of Patras, a small fortified town, is famed for the sieges it underwent during the late war of independence, and for the death of Lord Byron, which happened there in 1824.

In the Morea:—*Napoli di Romania* or *Nauplia*, the capital of Greece for several years, before the king removed to Athens, is a well-built city, strongly fortified, and possesses an excellent harbour; near the head of the gulf to which it gives its name. Nearly all the trade of the Morea centres here; consequently great activity prevails at the port; but its confined situation and the neighbouring marshes render it unhealthy. Its fortress of the *Palamedi*, which has been called the Gibraltar of Greece, and deemed impregnable, stands on the top of a lofty and precipitous rock, 720 feet above the level of the sea, and is inaccessible on all sides except the east, where it is connected with a range of barren rocky hills. Another fortress, called *Itch-Kali*, is built on a peninsular rock rising above the town, at the foot of the Palamedi. Before the removal of the court, Napoli contained 9000 inhabitants, but the number is now considerably reduced. To the west and north of Nauplia, and at the distance of a few miles, are the ancient cities of *Argos*, *Tiryns*, and *Mycenæ*. The first is a straggling town of ruinous houses, with a deserted citadel on the hill behind it, the celebrated *Larissa*. *Tiryns* has completely disappeared, but its citadel remains, a perfect specimen of cyclopean architecture, erected about the year 1379 B. C. Near the village of *Arabata* are the ruins of *Mycenæ*, once the capital of Agamemnon, built by the demigod Perseus about 1300 years B. C., and destroyed by the Argives about 466 B.C. The citadel still exists, occupying the top of a steep hill, and containing specimens of Hellenic masonry of various ages; the most ancient parts being in the same style as the walls of Tiryns. The treasury of Atreus, called also the tomb of Agamemnon, is built under the slope of the hill, and consists of a massy vaulted subterranean chamber, 47½ feet in diameter and 50

high, and connected by a door with a smaller chamber about 23 feet square. *Corinth* or *Korinth*, one of the finest cities of ancient Greece, was, during the late revolutionary war, reduced to ashes, and now presents only a mass of ruins, and a complete picture of desolation. A few new houses have recently been built, and lines marked out for the formation of new streets; but little progress has yet been made in restoring the city. It is situate in a very unhealthy plain, near the S.E. corner of the Gulf of Lepanto; but, being only 8 or 9 miles from the Gulf of Egina, it long formed an entrepot for the trade of Greece, merchants preferring to transport their goods across the isthmus, rather than sail round the stormy shores of the Peloponnesus. The citadel, called *Acrocorinthus*, is built on the top of a hill 1800 feet high, and is considered the strongest fortress in Greece next to that of Nauplia. The hill shoots up majestically from the plain, and forms a conspicuous object at a great distance: being seen from Athens, 44 miles in a direct line. *Patras* or *Padras*, a considerable town with 500 inhabitants, on the north-west coast of Achaia, has been recently enlarged and almost rebuilt with wide regular streets, but is subject to fevers occasioned by malaria. *Vostitza*, a sea-port town with 2000 inhabitants, 20 miles E. of Patras. About 15 miles from Vostitza is the convent of *Megaspelion* (big cave), in the face of a precipice, with from 250 to 300 monks, who possess large landed estates, chiefly in Elis. In the church is a miraculous image of the Panagia, or All-holy virgin, said to have been the work of St. Luke. *Tripolitza*, formerly the Turkish capital of the Morea, and a flourishing town, with 20,000 inhabitants, in a cold plain, 3000 feet above the level of the sea, and 22 miles W. by S. of Nauplia, is now a heap of ruins, with not a single house or inhabitant remaining. The ruins of *Mantinea*, now called *Palæopoli* (old town), are situate 8 miles N. of Tripolitza; and 13 miles S.W. of Tripolitza, near the banks of the Roufia, are the ruins of *Megalopolis* (big town), which was six miles in circumference, but of which little now remains except the theatre, still very perfect. Further down the river, about 13 miles from its mouth in the Ionian sea, are the ruins of the temple of the Olympian Jupiter, where the Olympic games were celebrated every fourth year by the assembled Greeks, and which once contained the statue of that god, formed by Phidias of ivory and gold, and considered one of the seven wonders of the world. *Kalamata*, the capital of Messenia, is a considerable sea-port town on the north side of the Gulf of Koroni. *Marromati*, a wretched village of a few huts, stands on the site of the ancient *Messene*, 11 miles N.W. of Kalamata, and at the foot of the steep hill of *Ithome*. The ruins of Messene are magnificent specimens of the grandeur and solidity of the Hellenic military architecture. *Navarino*, on the S.W. coast of Messenia, a fortified town near the southern entrance of a noble basin formed by the island of Sphagia (ancient *Sphacteria*), memorable for a battle fought on 20th October 1827, in which the Turkish and Egyptian fleets were destroyed by the combined British, French, and Russian squadrons, and which ended, in effect, the revolutionary war in Greece. *Navarino Vecchio*, the ancient *Pylos*, occupies a lofty promontory at the northern entrance of the bay. *Arcadia* ancient *Kuparissia* or *Cyparissia*: is a miserable ruined town, on the north-west coast of Messenia, about a mile from the sea, on the narrow summit of a rocky ridge. It has some trade, but only an open roadstead for ships; on which account most of its exports are conveyed to the island of *Proti*, or *Prodano*, for shipment. *Sparta*, so renowned in the history of ancient Greece, and afterwards so long deserted, has been constituted the capital of the new province of Lacedæmon. Sparta is situate in a plain near the right bank of the Basili-potamo (ancient *Eurotas*), about 20 miles from the sea; a plan has been formed for rebuilding it, and some of the public buildings are already in progress. *Mistra* or *Misitra*, 3 miles N.W. of Sparta, was formerly a large Turkish town on the slope of a hill; but the upper town is now quite deserted, and the acropolis is in ruins. *Monembasia* or *Napoli di Malvasia*, on the east coast of Laconia, is a considerable town, on the south side of an insulated hill, which is connected with the mainland by a bridge. The island is only half a mile in length and about 300 yards in breadth, of which the town occupies about one-third, with the houses piled above each other, and a castle on the summit of the rock, but separated from the town by a perpendicular cliff. All the coast within sight of the town consists of uncultivatable rocks.

ISLANDS.—The inhabited islands are:—*Hydra*, *Spezzia*, *Poros*, *Egina*, *Augistra*, *Salamis*, *Scopelos*, *Helidromia*, *Scinthos*, *Scyros*, *Syra*, *Tinos*, *Miconos*, *Andros*, *Cea*, *Thermia*, *Naxos*, *Paros and Antiparos*, *Siphnos*, *Seriphos*, *Cimolos*, *Milo*, *Polycandros*, *Sicinos*, *Ios*, *Amorgos*, *Santorin*, *Anaphe*, *Astypalæa*, *Eubœa*. *Egripo* (corrupted to *Negropont* by the Franks), the capital of Eubœa, a large town built on the site of the ancient *Chalcis*, at the narrowest part of the Euripus, or Strait which separates Eubœa from the continent. It was formerly the capital of the Turkish eyalet of the Jezairs, the usual residence, and under the immediate command, of the Capudan Pasha; but many of the best houses are of Venetian construction. The strait is divided into two unequal parts, by a small square castle on a rock, which communicates with the Bœotian shore by a stone bridge, 60 or 70 feet long, and with the Eubœan shore by a wooden draw-bridge, 35 feet long. On the south side no vessel but boats can approach Egripo; on the north side there is no difficulty. Before the revolution Egripo contained 16,000 inhabitants. *Syra*, the capital of Syra, a large and rapidly-increasing commercial town, is built on a conical hill, which is covered to the top with white-washed buildings, and crowned by a monastery. The harbour is one of the best in Greece, with safe anchorage, and a good light-house. The population in 1827 was only 6000; in 1837 it had already increased to 21,000. Syra is a free port; and the principal exports are figs of the finest quality. *Arna*, in Andros, an episcopal city, with a seaport, and 5000 inhabitants. *Naxia*, in Naxos, the see of a catholic archbishop, and of a Greek bishop. *Antiparos* contains a famous grotto, or deep cave, formed naturally in the limestone rock. *Milo*, in the island of the same name, contains the remains of an unfinished amphitheatre, cyclopean walls, a temple of Venus, and other antiquities. *Hydra* is a singularly interesting city, rising in dazzling whiteness and beauty on the amphitheatric slope of a barren rock, on the west side of the island of Hydra. The streets are precipitous and uneven, but remarkably clean; and the quay is lined with warehouses and shops; the dwelling-houses are built in the most substantial manner. Several monasteries are perched on the cliffs, and the churches and religious establishments amount to 100, some of them possessing ornaments of great value. The harbour is neither spacious nor secure. A few fishermen and others, driven from the continent by the oppression of their Turkish rulers, first raised here the nucleus of a town; and numbers of other people from Albania, Attica, and the Morea, crowded to it, till at length its population, in 1825, amounted to 40,000. The population does not now amount to more than half the number. In 1813 it possessed 375 vessels, with a burden of 45,000 tons, and 5420 sailors; but its trade was almost entirely ruined by the war of independence, in which its mariners took a principal part. *Spezzia* is built on the eastern shore of the island of the same name, at the entrance of the gulf of Nauplia, and contained, in 1825, 3000 inhabitants. The streets are better than those of Hydra, and the houses are equally good; the port is good and well-frequented; and the citizens are mostly engaged in commercial pursuits. They possess many fine vessels, and furnished sixteen ships, besides fire-ships, to the Greek navy during the late war. The climate is so salubrious that invalids are frequently sent thither for the restoration of their health; the women are esteemed the most beautiful in Greece. *Egina*, a newly built seaport town, in the island of Egina, in the middle of the gulf to which it gives its name, contains a museum, a library, and a school. The climate of the island is delightful, and the atmosphere is so pure, that epidemic fevers, the scourge of the Morea, are almost unknown in it. Egina was formerly celebrated for the richness and beauty of its ornaments, but almost the only remains consist of a few tombs, vestiges of wells, and a mosaic pavement. Near the S.E. end of the island, on the top of a hill of moderate height, are the ruins of the temple of Zeus Panhellenios (the Jupiter of all the Hellenes), consisting of 23 columns, still entire,

and the greater part of the architrave. These ruins are, however, thought by some antiquaries to be rather the remains of the temple of Pallas-Athenè (Minerva).

GULFS, BAYS, STRAITS.—The *Gulf of Zeitoun*, the *Channel of Talanti*, and the *Channel of Egripo*, together, form the strait called by the ancients *Euripus*, which divides Eubœa from the mainland of Greece. The Euripus has been always famous for its tides or currents, which flow sometimes the one way and sometimes the other, with such force as to turn mills at Egripo, even in the face of a contrary wind; but the nature, extent, and periodical intervals of these currents are not yet exactly ascertained. *Gulf of Egina*, between Attica and Argolis. *Gulf of Nauplia*, in Argolis. *Gulf of Kolokythi*, and *Gulf of Koroni*, both on the south coast of the Morea. *Gulf of Arcadia*, on the west coast. *Gulfs of Patras* and *Lepanto*, between the Morea and Hellas. The latter is a land-locked gulf, extending about 75 miles E. and W., with a breadth of 10 or 12, having the *Bays of Corinth* and *Lisa d'Ostro* at its east end, the *Bay of Salona* on its north side, and communicating with the Gulf of Patras by a strait only about a mile across, which is defended by the two castles of Rumeli and Morea. *Gulf of Arta.*—(See *antè*, p. 596.)

CAPES.—*Komiro*, *Kandili*, *Kili*, *Chersonisi*, *Doro*, *Mantelo*, and *Karysto*, in Eubœa; *Marothon* and *Colonna*, in Attica; *Skillo*, *Maleo* or *St. Angelo*, *Matapan*, *Gallo*, *Konello*, *Katakolo*, *Klarenza*, *Kologria* or *Papas*, in the Morea: *Bakari* and *Skropha*, in Western Hellas.

RIVERS AND LAKES.—The *Hellada* (Sperchius) drains a long narrow valley between Mount Œta and Othrys, and falls into the Gulf of Zeitoun. *Mavropotamo* (Cephissus) flows through Phocis and Bœotia into the lake of Topolias. *Asopo* (Asopus), in southern Bœotia, flows into the Channel of Egripo. The *Cephissus* and *Ilissus* flow through the plain of Athens into the Gulf of Egina. *Planitza* (Inachus) in Argolis. *Basili-potamo* (Eurotas) falls into the Gulf of Kolokythi. *Pyrnatza* (Pamisus) flows through Messenia into the Gulf of Koroni. *Lousi* (Neda) flows past Phigaleia into the Gulf of Arcadia. *Roufia* (Alpheus) drains the south-western part of Arcadia, and flows through Elis into the Gulf of Arcadia. Its principal affluent is the *Ladon*, from the north of Arcadia, where it has its source in the *Lake of Phonia* (Pheneos), which, being surrounded by mountains, emits its waters through a subterrancan channel. *Iliaco* (Peneus) in the north of Elis. *Fidari* (Evenus), and *Aspropotamo* (Achelous), both in Western Hellas. The latter is a large river which rises in Albania, 100 miles north from its mouth. Besides the lakes already mentioned are: The *lakes of Umbrakia*, *Great Ozero*, *Little Ozero*, *Arakhori*, *Angelo-Kastro*, and *Saurovitza*, in Western Hellas. The *Lake of Zaraka* (Stymphalus), N.W. of Argos, and surrounded by mountains which divide its basin from that of the Lake of Phonia. This lake has been supposed to send its water by a subterranean channel to the Planitza.

MOUNTAINS.—(See *antè* p. 152-3.)

IONIAN ISLANDS.

The Ionian Islands form a sovereign state, consisting of seven principal islands, and a number of smaller ones adjacent, lying along the coasts of Albania, Hellas, and Morea. The names, dimensions, and population of the seven larger islands are stated in the following table:—

Names.	*Length.*	*Breadth.*	*Area in Square Miles.*	*Population in 1836.*	*Relative Population.*
Corfu,	41	19	227	65,107	287
Kephalonia (Cefalonia),	30	18	348	63,197	182
Zakunto (Zante),	25	13	156	35,348	226
Santa Maura,	22	8	180	17,175	95
Thiaki,	14	3	44	9,644	219
Kerigo (Cerigo),	19	13	116	8,707	75
Paxo,	4	2	26	5,064	195
			1097	204,242	186

The smaller islands are: *Merera*, *Fano*, *Samothraki*, *Diaplo*, to the N.W., and *Vido* on the east side of Corfu; *Anti-paxo*, to the S. of Paxo; *Meganisi*, *Kalamo*, *Kastus*, *Arkudi*, *Atoko*, S.E. of Santo Maura; *Kerrigotto*, *Nautilus*, *Porrel'i*, *Porri*, *Ovo*, *Kouphenisi*, *Dragonera*, S. and S.E. of Cerigo. All the islands, both large and small, belong to the same great calcareous formation which prevails over Greece. Their surface is so remarkably mountainous that they do not contain a sufficient quantity of arable land to produce the corn required by the population; and, were it not for the vine, the olive, and the currant, which they produce abundantly, they could support but a small number of inhabitants. The climate resembles that of the neighbouring continent, except that the sea renders it more uniformly temperate and more humid. Snow often falls in winter; and lies on the mountains, but rarely on the plains. Sudden and furious squalls are frequent; and the sirocco or hot wind occurs at certain periods. The harvest is in June; earthquakes are very frequent, but not very destructive; malaria prevails in low situations in autumn; and the itch, which is common in some places, instead of being eradicated by medical means, is rather cherished by the people, from a strange notion that it is a preservative against the effects of the malaria. In other respects the climate is agreeable and healthy.

PEOPLE.—The people are of the same race as those of the adjacent continent; and the Ionians partake in the physical configuration of the Greeks. The complexion in healthy persons inclines to olive. Their eyes are almost universally brilliant and full, and generally dark; the hair generally brown or black; the beard copious; stature, middle-sized; constitution, sanguineo-choleric; gestures, vivacious; gait, erect and elastic; and their speech voluble and emphatic.

RELIGION.—The Greek church predominates, there being only about 3000 Roman Catholics, and 5000 Jews. At the head of the Greek church is a Protopapa, elected by ballot in an assembly of the clergy and nobles, and confirmed by the patriarch of Constantinople; the Catholics are under the charge of an archbishop. But both clergy and people are extremely unenlightened, and their religion consists of the grossest superstitions, which even the British government deems itself obliged to countenance.

EDUCATION.—At Corfu is a university, and also a seminary for priests of the Greek church. In each of the islands there is a "secondary school," maintained at the public expense, in which the ancient Greek and Latin, and the modern Greek, English, and Italian languages, arithmetic, and ele-

mentary mathematics, are taught. In the chief town of each island is a central school, supported at the public expense, for reading, writing, and arithmetic, and for training the village schoolmasters; there are, besides, district schools, on the same plan as the central, partly maintained by government and partly by private subscription. The district and village schools are under the superintendence of the head masters of the central schools; the whole being overlooked by an inspector-general. The whole establishment for education is under the charge of the commission for public instruction. The number of public schools in the islands, in 1836, was 138, which were attended by 2949 scholars.

GOVERNMENT.—The government is one of the worst specimens of oligarchy or exclusive aristocracy; the authority of the state being vested in magistrates and councils chosen by the nobles only, to the exclusion of the mass of the people, and administered principally for their behoof. The Ionian islands formerly belonged to Venice; but at the peace of 1815 were placed under the protection of the King of Great Britain, who is represented by a Lord High Commissioner, and he again in each island by a President whom he appoints. The legislative authority is vested in an assembly of forty members, elected for five years, who meet in session every two years. The executive power is vested in a senate, composed of five ordinary members and a president, who are elected from the legislative assembly. The municipal government of each island is vested in a council of five members and a president. The judicial authority in each island is vested in three tribunals, a civil, a criminal, and a commercial; and there is, besides, in each a court of appeal; and petty courts, held by justices of the peace, for minor pleas and offences. At the seat of government is a high court of appeal, consisting of four ordinary members, two English and two Greek; and two extraordinary, namely, the Lord High Commissioner and the President of the Senate. Trial by jury does not exist. A new code of laws has been digested for the islands. The military defence is placed in the hands of the protecting sovereign, and the regular military establishment consists only of British troops, to the number of about 3300. There is, however, a corps of militia in each island. The general charge of preserving the public tranquillity being directly and immediately connected with the military establishment, the high police of the "United States of the Ionian Islands" is placed under the direct management of the Lord High Commissioner; the sovereign has the right to occupy the fortresses, and maintain garrisons; and the military force of the islands is under the orders of the British Commander-in-Chief. The average revenue is about £176,000 sterling; and the average expenditure about £177,000, besides the pay of the regular troops and munitions of war.

PRODUCTIVE INDUSTRY.—Agriculture is still in a very rude state, and the implements of husbandry probably as primitive as they were in the days of Ulysses. The olive is the principal product; the vine is generally planted in the plains and valleys, and corn on the declivities of the hills. In Corfu and Zante soap to the value of £12,000 is annually made and exported; and also considerable quantities of common earthenware. Silk shawls, coarse linens, coarse woollen blankets, and goat-hair carpets and sacking, are also manufactured. The amount of the tonnage of vessels entered in 1836 was 273,853, and cleared, 272,415, of which only 22,606 entered, and 23,475 cleared, were British.—*(Martin's Colonies, &c. 591, &c.)*

The principal natural productions of the islands; the number of acres cultivated and uncultivated; and the numbers of live stock, in the year 1836, are stated in the following table:—

Articles of Produce and Live Stock.	*Corfu.*	*Cephalonia.*	*Zante.*	*Santa Maura.*	*Thiaki.*	*Cerigo.*	*Paxo.*	TOTAL.
Wheat,	6,133	538	7,182	1,724	73	453	34	16,137
Indian Corn, Barley, Calembochio, and Barley and Wheat,	17,833	5,854	966	3,978	340	8,466	.....	37,437
Oats,	3,910	530	492	547	13	.....	.....	5,492
Currants,	.....	9,102	6,440	8	190	.....	.....	15,740
Olives,	185,660	3,985	16,766	1,203	212	513	11,000	219,339
Vines,	86,795	11,834	13,600	4,216	756	1,305	406	119,152
Cotton,	98	432	327	101	2	54	.....	1,014
Flax,	647	255	134	99	71	109	.....	1,310
Pulse,	1,392	856	64	555	68	1,595	.....	4,530
Pasture,	30,775	450	1,474	5,350	1,626	5,285	.....	44,960
Uncultivated,	30,896	189,786	53,869	97,436	3,137	61,685	5,200	420,151
TOTAL of Acres,	364,139	223,622	101,314	115,217	6,488	79,525	16,640	885,262
Number of Horses,	4,106	2,220	3,330	2,462	765	1,010	296	14,189
" Beeves,	2,351	1,378	1,220	2,141	120	3,140	16	10,366
" Sheep,	21,708	26,962	13,156	12,006	4,134	16,900	2,910	95,970
" Goats,	16,524	14,668	8,07	20,072	6,554	2,910	23	68,826

TABLE shewing the Nature and Quantity of each kind of Produce, in 1836.

Articles of Produce.	*Corfu.*	*Cephalonia.*	*Zante.*	*Santa Maura.*	*Thiaki.*	*Cerigo.*	*Paxo.*	TOTAL.
Wheat, ... *Bushels.*	19,064	4,654	30,510	16,781	2,507	2,640	170	76,326
Indian Corn, &c. "	51,741	41,655	1,025	38,681	16,808	35,750	.....	185,660
Oats, ... "	12,963	3,584	1,050	4,884	434	.....	.....	22,915
Currants, ... *Lbs.*	.....	9,740,000	7,835,000	5,100	400,000	.....	.....	17,980,100
Olive Oil, ... *Barrels.*	85,246	2,729	9,520	1,342	1,280	195	12,907	113,219
Wine, ... "	55,042	44,100	48,770	35,443	6,196	20,010	586	210,147
Cotton, ... *Lbs.*	5,927	17,180	4,385	5,935	550	3,590	.....	37,567
Flax, ... "	26,523	13,150	5,610	15,085	11,495	3,070	.....	74,933
Pulse, ... *Bushels.*	5,342	7,340	1,100	5,473	2,268	1,855	.....	23,378
Salt, ... "	.....	.....	40,000	130,350	.....	.....	.....	170,350

—(From Tables of Revenue, &c. Colonies, 1836. Presented to Parliament 1839.)

CITIES AND TOWNS.—CORFU, the seat of government, situate on the east side of the island of Corfu, in N. lat. 39° 37′, E. long. 19° 56′, is a fortified town, with narrow and irregular streets, and ill-contrived houses; a cathedral containing the body of its tutelary deity, St. Spiridion, several Greek and Catholic churches and chapels, a university, gymnasium, ecclesiastical seminary, and several primary schools. Population 17,000. Corfu has a citadel on a projecting rock, and two other fortresses, one of them on the Island of Vido, which, when the works now in progress are completed, is expected to be nearly impregnable. The harbour is safe and commodious; and Corfu is the principal seat of the foreign trade of the islands. *St. Gago*, in Paxo, contains 4000 inhabitants. *Santa Maura*, in Santa Maura, 5000; *Vathi*, in Thiaki, 2000; *Argostoli* and *Lixuri*, both in Cefalonia, the former with 4000, the latter with 5000 inhabitants. *Zante*, on the eastern side of the Island of Zante, is a large town, with an imposing appearance, on the face of a hill, and containing 18,000 inhabitants. Zante contains a large plain, bordered by mountains, and covered with vineyards and olive groves, presenting that appearance of luxurious fertility which has procured for it the name of *fiore di Levante*—the flower of the Levant; but recently it has suffered severely from repeated earthquakes.

MEDITERRANEAN SEA.

This great inland sea, which has been in all ages the principal theatre of the commercial and maritime transactions of the European and Western Asiatic nations, extends in a direction nearly E. and W. about 2350 miles, with a breadth varying from about 100 to 650 miles, and covering an area of about 1,000,000 of square miles. Its northern coasts are formed by Europe and Asia Minor; its eastern, by Syria and Palestine; its southern, by Africa; while towards the west it gradually diminishes in breadth till it terminates with the Strait of Gibraltar, only 13 miles across in the narrowest part. The depth varies considerably. The depth of the Atlantic, on the outside of the Straits, is from 50 to 60 fathoms, but the channel deepens as it proceeds eastward, until, a little within Gibraltar, it reaches 1000 fathoms, and soon after gets beyond soundings. The Mediterranean is also very deep towards its eastern extremity; but between Sicily and Africa it is only from 30 to 100 fathoms deep; there seeming to exist in that quarter a submarine chain or shoal, which may be considered as an extension of the rock formations of Italy and Sicily, with deep water on both sides. A strong current perpetually sets into the Mediterranean through the Straits of Gibraltar; and although there is an opposite eddy on each side, yet the reflux is not nearly equal to the quantity flowing inward. It receives also the surplus waters of the Black Sea, which flow with a constant stream through the Dardanelles; but the rivers which fall into it are the contributions of a smaller extent of territory than the river basin of any other inland sea, in proportion to its area. The disposal of the waters thus constantly flowing into it, is considered by some philosophers to be sufficiently accounted for by evaporation from so large a surface in a warm climate; while others, on the contrary, maintain that there is a submarine current flowing outward through the Straits of Gibraltar, and thus making room for the lighter waters of the ocean that flow in the opposite direction. Tides are but little felt. They are perceptible only in certain parts of the sea, and seldom rise more than six inches above the mean level. Mr. Trevelyan, however, ascertained, by a series of observations at Antium, in the summer of 1836, that the tides are perfectly regular, and rise there to 14 inches. In the more easterly parts of the Mediterranean the tides are shewn by recent surveys to be much greater, though at the furthest west they may be scarcely perceptible. To the eastward of Sicily a tide is raised, which flows up the Adriatic, and rises in that comparatively narrow channel to nearly four English feet at new and full moon, and half that height at neap tides, alternately covering and laying bare the bottom of the Venetian lagoons. The Mediterranean being nearly surrounded by lofty mountains, at no great distance from its shores, is, in consequence, much exposed to storms, and to sudden gusts of wind, which raise short broken waves, more disagreeable, however, than dangerous to experienced seamen. In the western parts of the Mediterranean the temperature of the water below 200 fathoms is constantly about 55° Fahrenheit, which is much higher than that of the ocean in northern latitudes. The sea produces abundance of fish, the principal varieties of which are mentioned among the articles of productive industry of the countries along its shores.—(See *anté*, p. 138 and 139.)

RECAPITULATORY TABLE OF THE EUROPEAN STATES.

Name and Title.	*Area in Square Miles.*	*Population.*		*Annual Revenue in Pounds Sterling.*	*Debt in Pounds Sterling.*	*Army or Contingent.*
		Absolute.	*Relative.*			
I. EMPIRES.						
Austrian,	258,188	35,050,533	140	12,974,648	64,000,000	272,204
Russian,	2,000,000	52,943,000	26	14,200,000	40,356,000	730,300
Ottoman,	158,000	10,680,000	67	not known	not known	120,000
II. KINGDOMS.						
Great Britain, &c.,	118,734	24,028,345	202	45,000,000	810,000,000	109,000
France,	204,355	33,540,908	164	49,000,000	200,000,000	311,412
Prussia,	107,885	14,271,530	132	7,668,000	35,000,000	139,840
Belgium,	11,375	4,000,000	352	....	7,000,000	....
Netherlands,	11,897	2,859,111	240	....	....	
Bavaria,	31,392	4,315,469	137	2,500,000	15,000,000	35,600
Saxony,	5,772	1,652,114	286	720,000	3,500,000	12,000
Hanover,	14,769	1,706,280	115	920,000	1,350,000	13,054
Wirtemberg,	7,632	1,634,654	214	941,400	3,000,000	13,955
Denmark,	21,887	2,095,000	96	1,540,000	14,000,000	24,867
Sweden,	170,240	2,985,000	17	1,687,200	....	32,694
Norway,	122,460	1,194,827	9	450,000	none	12,000
Spain,	179,465	11,964,000	69	10,000,000	Bankrupt	....
Portugal,	36,596	3,061,684	83	....	....	....
Sardinia,	29,050	4,470,000	150	2,913,000	6,000,000	35,200
Two Sicilies,	44,510	7,752,000	151	4,500,000	not known	37,750
Greece (Hellas),	20,000	926,000	46	540,000	7,000,000	12,000
III.						
States of the Church,	17,860	2,471,000	138	2,809,000	not known	17,700
Electorate of Hessen-Cassel,	4,439	812,540	183	497,000	250,000	5,679
IV. GRAND-DUCHIES.						
Baden,	5,918	1,264,482	213	1,086,000	2,000,000	10,000
Darmstadt,	3,761	782,671	208	548,000	1,300,000	5,679

Name and Title.	Area in Square Miles.	Population. Absolute.	Population. Relative.	Annual Revenue in Pounds Sterling.	Debt in Pounds Sterling.	Army or Contingent.
Schwerin,	4,845	482,652	100	230,000	1,000,000	3,580
Strelitz,	767	85,257	111	50,000	150,000	718
Oldenburg,	2,400	264,154	110	150,000	....	2,829
Weimar,	1,419	245,813	173	195,400	800,000	2,010
Tuscany,	8,700	1,350,000	156	....	not known	4,500
V. Duchies and Princedoms.						
Nassau,	1,757	382,981	218	181,000	450,000	3,028
Brunswick,	1,507	251,000	166	165,400	400,000	2,096
Coburg-Gotha,	799	137,940	173	120,000	580,000	1,116
Meiningen,	888	148,078	167	110,000	400,000	1,150
Altenburg,	510	121,590	238	68,200	150,000	982
Anhalt-Dessau,	340	160,945	179	50,000	80,000	529
Anhalt-Koethen,	326	40,153	123	37,500	155,000	325
Anhalt-Bernburg,	340	45,135	133	37,500	85,000	370
Reuss—Elder,	145	30,041	203	14,000	24,000	223
Reuss—Junior,	448	68,854	153	47,000	90,000	522
Schwarzburg-Rudolstadt,	410	65,604	160	32,500	30,000	539
Schwarzburg-Sondershausen,	359	54,080	150	24,000	25,000	451
Lippe-Detmold,	437	76,730	175	49,000	70,000	691
Lippe-Schauenburg,	206	27,600	127	21,500	48,000	240
Waldeck,	461	56,000	121	35,000	140,000	519
Hohenzollern-Sigmaringen,	388	42,870	110	30,000	120,000	356
Hohenzollern-Hechingen,	138	21,000	152	12,000	30,000	145
Hessen-Homburg,	166	23,000	138	18,000	50,000	200
Lichtenstein,	53	5,880	111	1,700	....	55
Kniphausen,	17	2,859	168	....	....	....
Parma,	2,300	440,000	191	....	....	1,400
Modena,	2,068	390,000	188	274,000	....	1,750
Lucca,	420	145,000	345	....	....	680
Monaco,	50	6,500	130	....	....	....
Moldavia,	16,000	450,000	29	....	....	....
Wallachia,	30,000	950,000	31	....	....	....
Servia,	12,000	380,000	31	....	....	....
VI. Republics.						
Frankfort,	91	54,000	593	63,300	708,000	479
Lubeck,	142	47,000	333	43,200	375,000	407
Bremen,	106	57,800	545	83,200	325,000	485
Hamburg,	151	140,770	932	150,000	1,660,000	1,298
Cracow,	493	120,000	243	....	....	....
Switzerland. Zurich,	647	231,576	350	....	not known	3,700
Bern,	2,583	400,000	154	....	....	5,824
Lucerne,	600	124,521	207	....	....	1,734
Schwelz,	350	13,519	38	....	....	602
Uri,	420	40,650	91	....	....	236
Unterwalden,	260	22,571	86	....	....	372
Glarus,	281	29,348	104	....	....	482
Zug,	185	15,322	180	....	....	250
Fribourg,	496	91,145	183	....	....	1,240
Soleure,	256	63,196	246	....	....	404
Basel,	185	65,424	353	....	....	918
Schaffhausen,	116	31,125	268	....	....	466
Appenzell,	160	49,876	311	....	....	972
St. Gall,	760	158,853	209	....	....	2,530
Grisons,	2,540	88,506	35	....	....	1,600
Argau,	499	182,755	364	....	....	2,410
Thurgau,	267	84,124	315	....	....	1,520
Tessin,	1,041	113,923	109	....	....	1,804
Vaud,	1,190	183,582	155	....	....	2,964
Valais,	1,675	75,798	45	....	....	1,280
Neuchatel,	281	58,616	208	....	....	960
Geneva,	91	58,666	645	....	....	880
Ionian Islands,	1,200	210,000	175	....	....	....
St. Marino,	27	8,000	296	....	....	....
Andorre,	144	15,000	104	....	....	....
Total,	3,708,524	235,135,620	64			

ASIA.

GENERAL DESCRIPTION.

PHYSICAL GEOGRAPHY.

ASTRONOMICAL POSITION.—Between 1° 20′ and 78° N. latitude; and between 26° and 190° E. longitude.

DIMENSIONS.—The greatest length from N. to S., in the direction of the meridian, or from Cape Romania in Malaya to Cape Taimura in Siberia, exceeds 5300 miles; and the greatest breadth from W. to E. along the fortieth parallel of N. latitude, or from Baba Burun in Asia Minor to the east coast of Japan, is about 5600 miles. The superficial area is about 17,500,000 square English miles, or four times the extent of Europe.

BOUNDARIES.—*Northern:*—the Arctic Ocean. *Southern:*—the Indian Ocean. *Eastern:*—the Pacific Ocean. *Western:*—the Ural Mountains, and the River Ural, the Caspian Sea, the range of Caucasus, the Strait of Yenikaleh, the Black Sea, the Channel of Constantinople, the Sea of Marmora, the Dardanelles, the Archipelago, and the Levant, all which separate it from Europe; and the Isthmus of Suez and the Red Sea, which separate it from Africa.

GENERAL ASPECT.—The surface of this large continent is very diversified. The northern portion of it forms a plain rising gradually from the shores of the Arctic Ocean, intersected by a number of very large rivers, and exposed without shelter to the piercing blasts of the north. The southern portion, which stretches along the Indian Ocean, is composed likewise of comparatively level regions, exposed to the burning heat of the tropical sun; while the central region consists of a series of elevated plains and mountains, from which rivers flow in every direction to the neighbouring seas. This central region, however, is not, as was till recently supposed, a uniform table-land of great elevation, supported on all sides by lofty mountains; but appears, on the contrary, to be occupied by long ranges of mountains, with intervening plains and valleys, some of the latter of which have no great elevation. Among the numerous mountains which intersect the surface, four great chains or systems may be distinguished, stretching nearly parallel to each other, in the direction of east and west, or south-west and north-east, and named by modern geographers the *Altai;* the *Teean-shan;* the *Kwan-lun* or *Quan-lun;* and the *Himalaya.* These, with their numerous ramifications, occupy the greater part of the continent.

MOUNTAINS.—The chain of ALTAI, properly so called, occupies a space of scarcely more than 7° of longitude; but the name is usually given to the northern boundary of a mountainous region which extends from the sources of the river Irtish to the sea of Okhotsk. Between the Irtish and the Chulym, the most easterly affluent of the Obi, or between the meridians 83° and 86°, the chain consists of an extensive mass of high rocks, furrowed by narrow valleys and rapid rivers. Its culminating point lies N.W. of Lake Ubsa; to the east of which the chain divides into three ranges, of which the middle takes the name of *Tang-nou,* and extends eastward to the lake Kossogol. The most northerly range is named *Sayans-kean,* or *Mountains of Sayan;* the most southerly, *Ulangom-ula;* and the three ranges, between 98° and 102° E. long., join the mountains which encompass the lake Baikal, and are usually called the *Baikalian Mountains.* Farther east a chain shoots eastward, under the name of *Kentei,* and the *Mountains of Daouria,* and afterwards joins the *Iablonnoi-krebet* (chain of Apples), the *Khing-han,* and the *Aldan Hills,* which, stretching along the west side of the sea of Okhotsk, under the name of *Stanovoi,* extend to the north-eastern extremity of Asia, and terminate at Behring's Straits. The mean latitude of the Altai is between 50° and 51° 30′; the name, which is said to mean *Golden,* has probably been given to it on account of its great metallic riches. Although the top of the chain is said by the Chinese to reach the Milky-way, yet probably no part of it attains a greater elevation than 11,500 feet. The highest part of the range, so far as is yet known, extends east and west between the Bukhtarma, an affluent of the Irtish, and the Koksun, an affluent of the Obi. The most westerly of its higher summits, the *Holborukha,* loses its snow in May, but is covered with it again by the end of July: farther east is a loftier summit, the *Skhtskhebenikha;* but the highest is the *Bielukha,* or *Byeliicha,* which lies in the meridian of the Chinese military post of Chingistei, on the Bukhtarma, and rises, according to M. Gebler, who visited it in 1833, to about 11,000 feet above the level of the sea, and about 7000 above the surrounding mountains; it is covered with perpetual snow, which terminates, downwards, in immense glaciers. From this lofty mass a range branches off to the E.S.E., extending, as we have said, to the extremity of Asia; but the supposition that it formed the northern wall of a very high table-land is so far from the truth, that the steppes around the lake Zaisang, on the

south side of the chain, and certainly the steppes near the lake Balkashi, are not more than 1918 feet (300 toises) above the level of the sea. Westward from lake Zaisang the chain of Altai is prolonged, under the parallel of 49° or 50°, by a series of isolated hills and groups of small mountains, through an extent of about 540 miles, as far as the steppe of the Kirghis, and ends abruptly about 10° to the eastward of the meridian of the Urals. Among the secondary chains connected with the Altai are, 1. The *Mountains of Kolyvan*, between the rivers Irtish and Biya, which are rich in gold and silver; 2. The chain which Humboldt proposes to call the *Great Altai*, whose culminating point is about 2° of latitude to the south-east of the lake Ieke-Aral-noor, and which unites the Altai with the Tecan-Shan; 3. The *Tarbagatai* chain, which extends to the south-west of lakes Zaisang and Alaktougul, and separates them from lake Balkashi, for nearly 500 miles. In some places snow is said to lie on this chain during the whole year, which indicates an elevation of about 6000 feet. The chain is connected with the Altai by a series of low hills, running parallel to the south side of Zaisang, at the distance of about twenty miles. The Tarbagatai chain is considered as forming the north-western boundary between the Russian and the Chinese empires. The great volcanic mountains of Kamtschatka may either be considered as connected with the Altaian system, or, perhaps, more properly with the maritime chain to be afterwards mentioned.

The second great chain, called by the Chinese TEKAN-SHAN (or in French THIAN-CHAN), and by the Türkee nations TENGRI-DAGH, both of which names signify sky mountains, or mountains which reach the skies, extends from west to east nearly along the 42° parallel of north latitude. The culminating point appears to be that mass of hills, remarkable for three snow-clad peaks, which lies nearly in the centre of Asia, upon the confines of Kansu, in the Chinese empire, and is celebrated by the name of *Bükhda-ûla* (Holy Hill), the *Bogdo* of Pallas, the *Siue-shan* (snow hill), and the *Pe-shan* (white hill) of the Chinese, about 85° E. long. From Bukhda-ûla the Tecan-shan stretch east ward towards Barkoul, beyond which they suddenly fall to the level of the great desert of Cobi: but, after an interruption of about 10° of longitude, another chain, called *Gadjar* or *In-shan*, appears at the great bend of the Yellow river, following the same direction from west to east, which may be regarded as a prolongation of them. About 112° E. long. the Gadjar becomes confounded with a snowy chain called *Ta-hang*, and with a chain running north and south under the name of *Khinghan ula*, which forms a union in this quarter between the Tecan-shan and the Altai. The chain which may be considered as the principal, appears to stretch still further east, till it becomes connected on the one side with the *Mountains of Corea*, and on the other with the chain which extends along the coast of Mandchuria. Westward from Bükhda-ûla, the chain of Tecan-shan is prolonged, between Gulja (Ele) and Kuchu, and then between the lakes Temürtü and Aksü, to the north of Cashgar, under the name of *Müz-tagh*, or *Müsart*. From the point where the Bolor-tagh crosses the chain at right angles, the Müz-tagh continues its course without interruption, under the name of *Asferah-tagh*, to the south of the Sihoon, towards Khojend and Urateppeth, in Ferghana. The chain of Asferah, called also the ridge or chain of *Pamer*, separates the waters of the Sihoon from those of the Amü, and presents a group of lofty mountains, some of which are covered with perpetual snow. The chain then turns to the south-west, nearly in the meridian of Khojend, and in this direction, as far as Samarcand, is called *Ak-tagh*, or *Al-botom*; farther to the west, on the banks of the Kohik, it sinks into the plains of Bokhara and Mawer-ul-nahr. Besides the divisions of the chain already mentioned, there are several secondary ranges connected with the Tecan-shan; as, 1. The *Ala-shan*, a chain which runs along the west side of the great bend of the Hoang-ho, and appears to connect the Gadjar with the northern part of the great nucleus of Hoho-nor, named *Nan-shan* or *Kilian-shan*, belonging to the chain of Kwan-lun; 2. The *Ala-tagh* or *Alatau*, which extends northward from the Tecan-shan into Turkestan, crossing the course of the river Choui; and, 3. The *Ming-bulak*, to the north of Khokand, and nearly parallel to the Asferah.

The Chain of KWAN-LUN, KUEN-LUN, or QUAN-LUN, extends nearly along the thirty-fifth parallel of north latitude, bearing also the names of KULKUN and TARTASH-DAVAN, and commencing about the 70° E. long., to the westward of the *Tsüng-ling* (Blue or Onion Mountains), which are connected with the Bolor-tagh, and, according to the Chinese geographers, form its southern portion. From this point the chain runs eastward, and after crossing Thibet in two branches under the name of *Tsüng-ling*, to the north, and *Ngari*, *Tsang*, and *U*, to the south, forms in Eastern Thibet the *Kuenlun* of the Chinese, a mountain mass of prodigious height, which, in their mythological geography, is called the king of mountains, the highest point of the whole earth, the mountain which touches the pole and supports the sky; it is, in short, the Olympus of the gods of the Buddhists, and the Tao-sse. This great mass is supported on the north by the snowy chain of the *Nan-shan* and *Kilianshan*, which also extends west and east. Between the Nan-shan and the Tecan-shan the mountains of *Tangut* bound the edge of the desert of Cobi, and that and other contiguous chains form the country of Kham, Western Setchuen, and Yun-nan. In Thibet the Kwan-lun is connected with the Himalaya by several lofty chains, whose peaks are covered with everlasting snow.

The HIMALA, HIMMALA, HIMACHEL, or HIMALAYA (Abode of Snow) mountains extend in a general direction north-west and south-east. From the meridian 69° 10′ east, where it is connected with the Hindoo-koh, the chain extends to the east and south-east, along the northern frontier of India, Assam, and Birmah, and penetrates into the Chinese province of Yun-nan, where, to the westward of Yungchang, it exhibits sharp and snowy peaks. It turns abruptly to the north-east, on the confines of Hoquang, Keang-si, and Fuh-kien, and extends with its snowy summits near to the ocean, where we find, as if it were a prolongation of the chain, the *mountains of Formosa*, which are snow-capt during the greater part of the summer, shewing in this latitude an elevation of at least 12,049 feet. Westward, the chain of Himalaya forms, or is connected with, the *Hindoo-koh*, or *Indian Caucasus*, and the *Paropamisan mountains*, which extend in a westerly direction through five or six degrees of longitude, and then inclining to the north-west, appear to terminate before reaching the Caspian Sea. In the same direction, however, after a short interruption, the chain of *Elburz* appears, extending along the south side of the Caspian, and connected with the Caucasus and the mountains of Armenia. The culminating points of the Himalayas are found on the frontier of India, between 76° and 90° E. long., where they present a series of snow-clad peaks, many of which are from four to five miles of perpendicular height above the level of the sea; and one of them, the *Dhwalagiri* or White-mountain, rises to the enormous elevation of five miles and a half. The Himalayas, though running nearly in the same direction, are not exactly parallel with the Kwan-lun; but approach them so nearly in the meridian of Attok and Jellalabad, that between Cabul, Cashmere, Ladakh, and Badakhshan, the Himalayas seem to form only a single mass of mountains with the Hindoo-kho and the Tsüng-ling. In like manner the space between the Himalayas and the Kwan-lun, further east, is more occupied by secondary chains and isolated groups of mountains than the table-lands between the Altai and the Tecan-shan, and between the latter and the Kwan-lun. Consequently Thibet and Kashi cannot properly be compared in respect of their geological structure, with the high longitudinal valleys which are situate between the eastern and the western Andes. Nor is the level of these countries equal throughout; for the mildness of the winters and the cultivation of the vine in the gardens of H'lassa indicate the existence of deep valleys or circular depressions. The courses of the Indus and the Sanpoo, in opposite directions, also indicate a depression of Thibet to the north-west and the south-east. From this watershed, which is situate nearly in the meridian of the Jewahir, and Mount Cailasa or Cailas (in Chinese *O-new-ta*, and in Thibetan *Gang-dis-ri*), the chain of *Kara-korum-padishah* stretches to the north-west, towards the Tsüng-ling; and the snowy chains of *Hor* and *Zsang* to the east. The

Kara-korum chain forms the watershed between the affluents of the Indus on the one side, and the rivers of Yarkhand on the other. The *Hor*, at its north-western extremity, is connected with the Kwan-lun, and its course from the eastern side is towards the Tengri-noor. The *Zzang*, which is to the south of the Hor, bounds the long valley of the Sanpoo, and extends from north to east towards the *Neën-tsin-tangla-gangri*, a very lofty mountain which, between H'lassa and the Tengri-noor, terminates in Mount *Nem-shun-ûbashi*. Between the meridians of Ghorka, Katmandhû and H'lassa, the Himalayas send off to the north, towards the right bank, or southern border of the valley of the Sanpoo, several spurs covered with perpetual snow, the highest of which is the *Yaria-shamboy-gangri* (the snowy mountains in the country of the self-existing God), to the westward of the lake Yamruk-yumdzo or Paltee. Subordinate to the Himalayas and the Kwan-lun, the following chains may be mentioned: 1. The *Yung-ling*, which runs north and south, separates, by a long series of snowy peaks, China from Thibet, and joins the chain of *Pe-ling*, which bounds Shansi to the south, and has several snowy summits. On the frontier of Honan it becomes lower, and runs north-west towards Shansi, where it joins the Ta-hang. In Shansi itself, a secondary chain, called *Loung*, stretches from the Pe-ling north-west to the Hoang-ho, where it rises to the snow line, and unites with the Ala-shan. In general, the Pe-ling marks the boundary between the basins of the rivers Hoang-ho and Yang-tse-kiang, terminating near the sea, between their mouths. The *Nan-ling*, rising from the extremity of the Yun-ling, at a great distance from the Pe-ling, approaches the latter as it advances eastward, and sends off to the north-east several branches, which accompany the windings of the Yang-tse-kiang, even to its mouth. The mountains of *Yan*, to the north-west of Pekin, and the *Ta-hang*, to the west, in Shansi, appear to belong equally to the Tecan-shan and the Kwan-lun. 2. The *Sub-Himalayas*, which extend along the south side of the great chain, and form with it the valleys of Nepaul, Bootan, &c. 3. The chain which, under the names of *Yomadoung* and *Anapektouiou*, extends from the upper end of the valley of Assam to Cape Negrais. 4. The *Birman-Siamese* chain, which extends north and south, between the valleys of the Saluen and the Meinam, from the confines of Yun-nan through the peninsula of Malaya to Cape Romania. 5. The chain which traverses Laos, and forms the eastern boundary of Siam, separating the valley of the Meinam from that of the Maykuang. 6. The chain of *An-nam*, which forms the watershed between the affluents of the Maykuang and the numerous rivers of Tonkin and Cochin-China. 7. The *chain of Suleiman*, which extends from north to south, nearly parallel with the river Indus, and whose branches form the numerous secondary chains which traverse Affghanistan and Beloochistan, losing themselves in the table-land of Kerman on the one side, and terminating at Cape Jask on the other. Its principal summits are, *Suffid-koh* (White hill), west of Peshawer, about 14,000 feet above the level of the sea, and *Takht-i-Suleiman* (Solomon's Throne), 31° 38′ N. lat., 11,000 feet. The loftiest peaks of the Himalayas are supposed to be those of *Dhwalagiri* (White hill), nearly in the meridian of Benares, and *Chumulari* in Bootan; their elevation being calculated, though not exactly ascertained, at about 28,000 feet. Farther west, various parts of the range have been approached, and even crossed by Europeans, and the elevation of the summits pretty nearly ascertained. The *Southern*, or *Hither Himalayas*, which separate the feeders of the Sutlej from those of the Pabur, Roopir, and Andrytie, vary from 16,992 to 19,512 feet, and the passes from 15,000 to 16,000; the *Jummotri peaks*, or *Bunderpooch mountains*, from 20,122 to 21,155; *St. George*, *St. Patrick*, and the *Pyramid*, above Gangoutri, 22,240, 22,385, and 20,966; *Roodra-Himala*, 22,390; *Surga-Rooer*, 23,441; a cluster extending from Kedarnath to Budrinath, six peaks, 22,130 to 23,441; and three contiguous peaks, 19,178 to 21,683; *Jewahir* four peaks, 22,385 to 25,741; *Dhaibun*, in Nepaul, 24,640, and *Gotsainthan*, also in Nepaul, 24,740.

The BOLOR, BELUR, or BULYT-TAGH (Cloudy Mountains), extend in a direction transverse to that of the preceding chains, being connected with the Tsûng-ling on the south, and united on the north to the chain which passes to the north-west of Cashgar, under the name of Cashgar-davan. Of the northern part of the chain very little is known; but, in its middle portion, it forms or consists of the table-land of *Pamer* or *Pamir*, which is elevated 15,600 feet above the level of the sea, and is overtopped by mountains which rise several thousand feet higher. From Pamer, a chain of very lofty mountains, the *Hindoo-koh* of the Western Asiatics, extends in a S.W. direction, terminating with a lofty snow-capt mountain, named *Koh-i-baba*, 48 miles W. of Cabul, and being connected with the Himalayas at the valley of Punjsheer, N.E. of that city, forms the watershed between the basins of the Oxus and the Indus. From the same part of Pamer, the Belûr is continued almost straight S. till it join the Himalayas, separating in its progress the hill country of Chitral from Little Thibet; while a third branch extends in an easterly direction, towards the chain of *Kara-korum*, which, as already mentioned, separates the basin of the Indus from that of the river of Yarkhand. It thus appears that the chains of Hindoo-kho and Karakorum may either be considered as diverging ranges of the Belûr-tagh, or as constituent parts of the western prolongation of the Kwan-lun. Though their elevation has not been ascertained by measurement, they appear to be much higher than the Himalayas, for they form a complete watershed between India and Central Asia, while, on the contrary, the Himalayas are interrupted and broken through in many places by the streams which flow from the northern ranges and the hill country which lies between them.

The URALS, or UMALIAN MOUNTAINS, which belong in common to Europe and Asia, extend rom north to south, through 20° of longitude, from the Arctic Ocean to the Sea of Aral. Compared with the preceding chains, the Urals are very low in their general elevation, though some of them reach the limit of perpetual snow, a circumstance which is not remarkable in their high latitude. Where the road from Moscow to Siberia crosses these mountains, the chain is about 40 miles broad, but the ascent and descent of the road are so nearly imperceptible, that were it not for the precipitous banks everywhere to be seen, the traveller would hardly suppose he was crossing a range of hills. The average elevation of this part of the range seems not to exceed 1350 feet, though some rocky masses rise perhaps a thousand feet higher; and the base upon which the chain rests is itself 900 feet above the level of the sea. Beyond 58° 20′ the chain presents several summits which attain between 2000 and 3000 feet; but the highest part of the range is situate to the north of 59°, and the highest of all, the *Daneshken-kamen*, lies to the north of 60°. The summits of this northern part of the range have been ascertained to rise to between 8000 and 9000 feet above the level of the sea; but the principal summits are detached mountains, to the eastward of the main range. Lateral branches also extend eastward to a considerable distance into the plain. The principal chain bears successively from north to south the names of *Poyas*, the *Verkhûturian Urals*, the *Urals of Iekaterinburg*, and the *Bashkirian Urals*. Several low branches diverge into the governments of Arkhangel and Vologda; but the principal subordinate or diverging chains are connected with the Bashkirian Urals. The *mountains of Obtsheisyrt*, which diverge from the western slope of the principal chain, are really nothing more than a long table-land of undulating hillocks extending into the government of Orenburg; forming, however, the northern limit of the depression which surrounds and contains the Caspian Sea. The *chain of Mooghajar* extends into the country of the Kirghiz, and seems to be connected with the plateau called the *Ust-Urt*, between the Caspian Sea and the Lake Aral. Subordinate to this last-named chain, or part of the same group, are the *Great Bürzouk*, a chain of low hills, which extends in a series of rocky cliffs along the northern shore of the Aral, spreading out towards the west, and turning into the isthmus; and the *Little Bürzouk*, which are situate a little farther to the south-east, and terminate with a promontory at the north-eastern corner of the Aral. The *mountains of Novaia Zemlia* may also be considered as an orographic connection or prolongation of the Urals. Their principal summit is *Glassowsky*, about 2500 feet above the level of the sea.

The remaining mountains of Asia, those of the south-west, have been classed by the French geographers as one group, which they call the WESTERN or TAURO-CAUCASIAN SYSTEM. The grand nucleus, or centre of the system, is formed by the high table-land of Armenia, and the lofty mountains which intersect and overtop it. From the stupendous peak named *Macis* by the Armenians, *Agri-dagh* by the Turks, and *Ararat* by Europeans, two ranges diverge to the westward, forming between them the long valley of the Murad or Eastern Euphrates. The southern of these are the *Mardin Mountains* (*Mons Masius* of antiquity), which are merely a prolongation of the *Taurus*, which extends into Asia Minor. The northern branch is named by the Turks *Kus-dagh*, *Kizildjeh-dagh*, *Ayhir-dagh*, and *Ala-dagh*; by the Armenians *Dagh-e-dagh*, and *Macis*; and to the north of it are two long narrow valleys drained by the Karasu and the Aras. Farther north the mountains of *Tschildir* and *Ismik* separate the table-land of Armenia from the lowland on the Black Sea, and are connected with Agri-dagh by irregular ranges and clusters of mountains, which separate Armenia from Georgia and Azerbijan, under the names of *Klardjethi*, *Tassi*, *Medira*, and *Sdorin Georgas*, or *Lower Caucasus*.

From Armenia these chains of mountains diverge towards the west, which may be considered as forming so many different groups. The first chain encloses the upper basin of the Euphrates, and passing that river above Samosat, advances toward the west, under the names of *Taurus*, *Jebel-Kurin*, and many other designations, along the south coast of Asia Minor, terminates in various promontories and islands in the south-western part of the peninsula. The mountains of Rhodes and Cyprus may be considered as its dependencies. The second of the three chains proceeds also into Asia Minor, to the northward of Taurus, and its eastern part corresponds with the *Anti-Taurus* of the ancients. Extending in different directions, and with many interruptions, it intersects all the interior of Asia Minor, and is ultimately divided into numerous branches, which terminate on the shores of the Archipelago. The third chain likewise extends into Asia Minor, along the southern coast of the Black Sea, at no great distance inland. Towards the south and south-east three other chains are detached from the central nucleus, two of which, however, may be considered as merely branches of the Taurus, while the third seems to be a prolongation of this chain itself. To the westward of the Euphrates, Taurus sends off several branches southward, the most westerly of which reaches the sea, and separates Syria from the ancient Cilicia. This is the *Amanus* and *Pierius* of the Latin geographers, but now bears the name of *Alma-dagh*. It terminates between the Gulf of Scanderoon and the mouth of the Orontes; but is only divided by the narrow channel of that river from the *mountains of Syria*, which may be considered as the prolongation of the branch of Taurus. Commencing with the lofty peak of *Jebel-el Akra* (*Mons Casius*) and *Mount St. Simeon*, which connects them with Alma-dagh, the Syrian mountains extend southward, nearly parallel with the eastern shore of the Mediterranean Sea, under the names of *Jebel Akra*, *Jebel Chakrinah*, *Jebel Kraid*, *the mountains of the Nozaries*, *Lebanon*, and many others. *Lebanon* forms two branches; the western being the *Libanus* of the Latins, which terminates on the coast near Sidon, while a branch extends southward through Judea, forming the watershed between the basin of the Jordan and the Mediterranean Sea; the eastern is the *Anti-Libanus*, which extends under various names, and with several interuptions, into the deserts of Arabia, beyond the Dead Sea. The second chain is detached in the eyalet of Diyarbekr, extends into Mesopotamia, and terminates at the Euphrates in the *mountains of Sinjar*; and seems to be the *Mons Masius* of the Latins. The third chain, the most remarkable of the three for its elevation and its length, is detached from Armenia, to the south of the Lake of Van, and under the names of *Aglan-dagh*, *Elvend*, *mountains of Kurdistan*, *Louristan*, *Bukhtiari*, &c. extends far to the south-east, forming the boundary between the plains of Assyria and Babylonia on the one side, and the lofty table-land of Iran on the other. It seems to be finally lost in the deserts of Kerman. The northern part of the chain seems to correspond with the ancient *Niphates*; the southern prolongation with the ancient *Zagrus*. Subordinate to this chain, and nearly parallel with it, is the long ridge of *Jebel Hamrin* or the *Hills of Hamrun*, which cross the bed of the Tigris above the 35° N. lat., and extend to the south-east, forming the northern border of the alluvial plains of Babylonia and Chaldæa. To the east of Zagrus the numerous ridges, which form a sort of net-work over the surface of Persia, may also be considered as dependancies of the Tauro-Caucasian system. From the east side of Armenia a lofty chain is detached to the south-east, which, under the name of *Elburz*, passes to the south of the Caspian Sea, and terminates in Khorassan, though it may be considered as prolonged in the *mountains of Nishabor*, which rise in the same direction, after a little interruption, and are connected with the great chain of the Himalayas. To the north of Armenia, a chain stretches through the pashalics of Kars and Akhaltsike, in the latter of which it forms the southern boundary of Imeritia, and then stretches in a north-easterly direction, and joins the Caucasus in Georgia, forming there the watershed between the affluents of the river Rioni, which flows to the Black Sea, and the Kur, which flows to the Caspian. The great range of *Caucasus*, which forms the northern part of the Tauro-Caucasian system, extends along the north-eastern coast of the Black Sea, across the isthmus, and terminates in a series of low hills in the peninsular promontory of Abcheron, on the west side of the Caspian Sea; but covers with its branches the *Daghestan* or hill country, which extends to a considerable distance to the northward of Abcheron. The length of the principal chain of Caucasus exceeds 700 miles, while its breadth is only from 60 to 120. The loftiest summits are found near the middle of the chain, and are covered with perpetual snow. The snow line along the chain varies from 10,000 to 11,000 feet above the level of the sea. The *mountains of the Crimea* are an orographic dependancy of Caucasus, in the line of which they lie, and from which they are separated only by the Strait of Yenikaleh, and the alluvial delta of the river Kouban.

TABLE OF THE ELEVATIONS OF THE PRINCIPAL SUMMITS OF THE TAURO-CAUCASIAN SYSTEM.

	Feet.
1. ARMENIA AND ASIA MINOR,—	
Agri-dagh, Macis, or Ararat, N. lat. 39° 35′, E. long. 44° 12′, First peak,	17,265
" " " " Second peak,	12,162
Sepan, or Supan-dagh, N. side of the Lake of Van,	11,000
Ali Ghuz, N.W. of Erivan, in Russian Armenia,	12,000?
Sevellan, Sahend, } In the Persian Province of Azerbijan, {	12,000, or 13,000?
	9,000?
Mountains of Akhaltsike,	10,000
City of Erzroum, the capital of Turkish Armenia,	5,600
" Kharput, S.E. of Erzroum,	5,032
Crest, or medium elevation of Taurus,—	
At Maden-goumish,	5,053
" Dawah-Boini,	4,453
" Khutel,	3,379
" Gul-dagh,	4,808
" Ayeli,	5,650
Arjish-dagh, in centre of Asia-Minor, S. of Kaisariyeh,	13,000
City of Sivas, in centre of Asia-Minor,	3,894
" Kutahya, "	6,000

	Feet.
Hassan-dagh, S.W. of Kaisariyeh, in Asia-Minor,	8,000?
Olympus, near Brusa, S. of the Sea of Marmora,	9,100
Ida, S.E. of the Dardanelles,	5,435
2. In Syria,—	
Jebel-el Akral, or Mount Cassius, at the mouth of the Orontes,	5,318
Summit of Lebanon, Jebel Sannin, N. of Baalbec,	11,050?
Mount Tabor,	2,053?
Mount Carmel,	2,250?
3. Caucasus and Elburz,—	
Elbûrz, highest peak of Caucasus, 43° 5′ N. lat., 42° 50′ E. long.,	17,796
Kasbec, 42° 40′ N. lat., 44° 41′ E. long.	15,345
Pass of Dariel, leading from Vladi-Kaukas to Tefiis,	8,000
Tchatir-dagh, S.E. coast of the Crimea,	5,110
The Peak of Demavend, in the range of Elbûrz, between Irak and Mazenderan, 52° E. Long.	14,700
Mountains of Karalini, between Armenia and Georgia,	6,000

The Mountains of Arabia, though they may also be considered as part of the Tauro-Caucasian system, and are so classed by Balbi, yet seem to be really so little connected with it, that we shall be justified in treating them as a separate group. We know, indeed, very little about them. Arabia seems to be, like Persia, an immense table-land surrounded and intersected by mountains, but with their elevation and direction we have little acquaintance. The best known ranges seem to be those which extend, at various distances, along the coasts of the Red Sea, the Arabian Sea, and the Gulf of Oman, attaining an elevation between 6000 and 9000 feet, and forming the boundary of the table-land of the interior.

The Mountains of India are classed by Balbi as dependencies of what he calls the Altai-Himalayan system; but they are so completely separated from the Himalayas that neither geographically nor orographically can we admit the correctness of his classification. The most northerly chain of the Indian mountains, named *Aravulli*, extends about 350 miles from N.E. to S.W., through Rajpootana, with an average elevation of about 3600 feet, and forms the western boundary of a hilly region which sends its waters to the Ganges. The *Vindhyia* and *Sautpoora mountains* are two parallel ranges, which stretch from west to east, along the valley of the river Nerbuddah, and are connected at their eastern extremity with a mountainous region which occupies the central portion of India, and terminates, on the one side, at Rajmahal on the Ganges, and on the other, near the sea-coasts of Orissa. Their average elevation does not exceed that of the Aravulli. The *Western Ghauts* extend in a continuous line along the south-western coast of India, from the valley of the river Tuptee to the valley of Coimbatoor, where they are connected with the *Nilgherries*, the loftiest mountains of the Peninsula. The *Eastern Ghauts* follow, in like manner, the line of the south-eastern coast of India, but form a less continuous and less regular chain than those of the west. Both chains may be considered as prolonged by the hills which extend southward from the valley of Coimbatoor, and terminate at Cape Comorin; though it is rather with the eastern than with the western Ghauts that the latter seem to be connected. The *Mountains of Ceylon* form a detached group of great elevation in the centre of the island. (See India and Ceylon.)

The Japanese or Maritime Chain includes all the mountains which are found in that long chain of islands which extends from Kamtschatka to the Channel of Formosa; and should properly include the mountains of Kamtschatka also. The two extremities of the chain, the mountains of Kamtschatka and Formosa, seem to be its loftiest portions; the whole chain is a series of volcanoes.

Table of the Elevations of the Japanese Chain.

	Feet.
Klutchevskaia, or Klioutshevskvi, N. lat. 56° 8′,	16,512
Koriatskaia, 58° 19′,	11,215
Kronotskaia, 54° 8′,	10,625
Shivelutsh, S.E. peak, 56° 40½′,	10,591
——— N.W. peak, 56° 40′,	8,716
Jupanovskaia, 53° 35½′,	9,060
Avatchinskaia, or peak of Awatshka, 53° 17′,	8,760
Tolbatschinsk,	8,346
Villuchinskaia 52° 43½′	6,750
All these are in Kamtschatka.	
The peak of Jeso,	7,680
Mountains of Formosa, probably	12,000

Volcanoes. — Asia contains very few volcanoes in proportion to its vast extent. 1. The principal are found in Kamtschatka, to the number of five, of which the *Klioutshevskoi* or volcano of *Tolbatschik*, is the most formidable. Next to it are the *Avatsha* and *Kamtshatskaia*, besides which there are eight smaller ones 2. The *Djenkyet*, in Indo-China, between Moyeip and Tavay. 3. The *Pe-shan*, *Pih-shan* of the Chinese, or *Eshikbash* of the Turks (goathead), on the northern slope of the Tecan-shan (42° 35′ N. lat., 80° E. long.), between Koutche, in Little Bukharia, and Koigos, on the banks of the Elee, and the *Ho-tcheou*, upon its southern slope, not far from Turfan (42° 40′ N. lat., 90° E. long.), are very remarkable as being the most distant volcanoes from the sea yet known. According to the reports of the Chinese, the Pe-shan, which they also name *Ho-shan* and *Aghi* (fiery mountain), sends forth fire and smoke without intermission. Of the present state, however, of the mountain, we have no very certain information. It is not known whether the name *Pih-shan* implies that its summit reaches the line of perpetual snow, or whether it merely denotes the glittering hue of a peak covered with saline substances, pumice stone, and decomposed volcanic ashes. From Chinese history it appears indisputably to have been, in the first century of our era, a volcano in the strictest sense of the word, vomiting forth torrents of lava. At present, it would appear to be rather a solfatara. For a long time it has ceased to eject lava, but it produces ammoniacal salt in such abundance that the inhabitants of the country often pay their tribute to the Emperor in that commodity. The mountain is full of caverns and crevices, which in spring, summer, and winter, are filled with fire to such a degree that during the night the surface appears to be illuminated with thousands of lamps, and it is then unsafe for any person to approach it. It is only in winter, when the snow has extinguished the fire, that the sal-ammoniac is gathered; the salt is found in the form of stalactites, which are detached with difficulty. To the eastward of Pe-shan, the whole northern slope of the Tecan-shan presents volcanic phenomena. Lava and pumice-stone are found there, and even considerable solfataras, which are called "fiery places." The solfatara of *Urumtsi* (46° N. lat., 84° E. long.), 40 leagues westward of the meridian of Ho-tcheou, at the foot of the Bükhda-ûla, is five leagues in circumference; in winter it is not covered with snow, but is supposed to be full of ashes. If a stone be thrown into it flames issue forth, as well as black smoke, which continues for some time.

Sixty leagues eastward from Pe-shan is a lake of very considerable size, the different names of which, in the Chinese, Kirghiz, and Calmuck languages signify "warm, salt, and rusty water." The volcano of *Turfan*, or *Ho-chow* (City of fire), emits an uninterrupted column of smoke, which at night appears like a flaming torch. About 230 miles north of Urûmtsi, in a plain adjoining the river Khobak, which falls into the little lake Darial, there is a hill whose sides, though they do not smoke, are very hot, and yield a considerable quantity of ammoniacal salt. Besides these four places hitherto known, Pe-shan, Ko-chow, Urûmtsi, and Kobok, there is an insulated conical mountain, Araltube, in the Lake Ala-kûl, which has been in a state of ignition in historical times. It is situate in the volcanic territory of Bishbalikh to the W. of Kobok and to the N. of the Pe-shan, at the distance of 60 leagues from each. We are thus acquainted in the interior of Asia with a volcanic territory of upwards of 2500 square leagues, distant 300 or 400 leagues from the sea, and occupying one-half of the long valley between the Altai and the Tecan-shan. The chief seat of volcanic action seems to be in the Tecan-shan; on the north side of the Tarbagatori and the Lake Darial the action becomes weaker; on both sides of the Tecan-shan violent earthquakes are felt, and betweeen the lakes Balkashi and Ala-kûl they are said to be very common. The city of Aksû was entirely destroyed by one in the beginning of the 18th century. The Caspian Sea likewise appears to be surrounded by a volcanic territory. On the east side there are hot springs at *Soussac*, in the Karatau mountains, near the city of Turkistan; on the south and the west sides, three volcanoes are still in activity, *Demavend*, *Ararat*, and *Seiban-dagh*, besides many others which are now quiescent. The chain of Caucasus abounds with trachytes, porphyries, and warm springs, and numerous mud volcanoes appear on the isthmus between the Black Sea and the Caspian. But it is in the islands that the volcanoes are most formidable. A continuous line of volcanic action commences on the north with the Aleutian Islands, and extends first eastward for 230 miles, and then southward without interruption to the Moluccas, where it branches to the E. and N.W. The N. portion of this volcanic belt is the long peninsula of Alashka in N.W. America, from which it extends through the Aleutian islands to Kamtschatka, in the S. part of which are a number of active volcanoes. The belt then forms a train of volcanic mountains extending through the long line of the Kurile Isles, nine of which are known to have been in eruption, besides Jeso and Niphon, where the burning vents are very numerous, slight motions of earthquakes almost incessant, and violent shocks experienced at distant intervals. Between the Japanese and the Philippine islands the communication is preserved by several small insular vents. *Sulphur Island*, in the Loochoo cluster, emits sulphureous vapour; and Formosa suffers greatly from earthquakes; in Luzon are three active volcanoes; there was also an eruption in Mindinao in 1764. The belt is then prolonged through Sanguir and the N.E. end of Celebes, by Ternate and Tidore, to the Moluccas, whence a great transverse line runs westward through Wetter Ombay, Panter, Flores, Sumbawa, Lombok, Bally, Java, and Sumatra, ending with *Barren Island*, a very active volcano in the Bay of Bengal. In Java alone there are 38 large volcanic mountains, many of which continually discharge smoke and vapour. The volcanic belt is prolonged in another direction through Borneo, Celebes, Banda, Papua, New Britain, New Ireland, and various other islands in the Pacific.

DESERTS.—Asia presents a great number of deserts and steppes, several of which are of immense extent. With little exception, all the northern part of Asiatic Russia may be regarded as an immense steppe, interspersed with marshes; in the southern part of the same region are many smaller steppes and salt plains, among which may be mentioned the great steppe of the *Kirghis*, N.E. of Lake Aral; *Ischim*, between the Irtish and the Tobol; and *Baraba*, between the Irtish and the Obi. But the most remarkable deserts are those sandy plains that occupy the greater part of the south-west and central regions of the continent, extending, with little interruption, from the shores of the Atlantic Ocean to the north-east of China, through a space equal in length to 130 equatorial degrees of longitude, or upwards of 9000 miles, more than a third part of the earth's circumference. This tract does not indeed form one continuous desert; for, besides the *oases*, or islands, with which it is sprinkled, it is interrupted, in the eastern part of Africa, by the narrow valley through which the river Nile conveys its tropical waters to the Mediterranean Sea. A little farther east it is nearly intersected by the Red Sea, which leaves only the narrow isthmus of Suez to connect the deserts of Africa and Asia. To the east of Arabia, it is again interrupted to a considerable extent by the Persian Gulf and the plains watered by the rivers Euphrates and Tigris. To the east of Persia, the river Indus separates the deserts of Beloochistan from the desert in the N.W. of Hindostan, while the gigantic mountain chains of Himalaya, Hindoo-koh, and Kwan-lun form a complete separation between the deserts of Persia and India, and those which occupy the interior of Asia. On the east of the Red Sea, this desert occupies nearly the whole peninsula of Arabia to the extent of more than 1000 miles in length, and from 700 to 900 in breadth, exhibiting everywhere the same character as the African Sahâra. The deserts of Persia are nowhere so extensive as those of Arabia, their continuity being more interrupted by ranges of mountains and well watered fertile valleys, which form the inhabited portions of the country. The deserts of the interior bear the names of *Cobi* or *Gobi*, *Shamo*, and *Tola*, but are very little known to Europeans. *Gobi*, in the Mongol language, means a *naked desert*, and is equivalent to the *Shamo* or *Hanhai* of the Chinese. They extend almost continuously about 2000 miles in length, with a breadth of from 200 to 300. Marco Paolo says, that it takes a month's journey to cross the desert from N. to S., but to go through it lengthways would occupy a whole year. The journey, he says, is entirely through sands and barren mountains, in which water is found every day; yet at some of the resting places it is so scanty as scarcely to suffice for a caravan of 50 or 100 persons with their cattle. In three or four places the water is salt and bitter, but in general it is very good. In the whole journey across the desert no beasts or birds were to be seen, and it was reported that many evil spirits resided there, and occasioned wonderful illusions to travellers. The eastern part of the desert was crossed by Mr. Bell of Antermony, in 1720, in the train of a Russian embassy. He was twenty-eight days in passing from the river Tula, on its northern border, to the first cultivated land on the south side, where he found to his great satisfaction a small brook of fresh water, and some Mongolian huts. The desert exhibited everywhere a level surface, mostly overgrown with rank grass, and occasionally interrupted by patches of sand and gravel; but in the middle there was a belt of sand 20 miles across, so loose as to be blown about, and raised into hillocks by every blast of wind. During a later Russian embassy, in 1830, a series of heights was ascertained across this part of the desert, from Kiakhta to Pekin, and it was found that the pass leading over the mountain chain, to the south of Urga, and to the north of the river Tula, is only 5000 feet above the level of the sea; and that on the southern border of the desert, not far north of Pekin, the highest passes through the mountains which are traversed by the great wall rise only to 5525 feet. Between Urga and the great wall lies the desert, which, however, is not a perfectly level plain, but sinks towards the middle, where it is about 3000, and in some places only 2600 feet above the level of the sea, and forms a long flat valley, which is the proper desert, extending east and west. Its surface is covered with sand, abounds in salt, and exhibits everywhere the traces of its having once been the bed of a sea. Farther west, towards Hami, the country appears to rise considerably; but beyond this it would appear to be furrowed again by the valley of the large river Yarim, which forms the drain of the hill countries of Kashgar and Yarkhand, or Little Bukharia, and terminates in the Lake of Lop. In Western Asia, *the Deserts of Turkestan* occupy the greater part of the surface of that country, the only cultivable portions of it, below the mountains, being the narrow strips of land along the rivers, within

reach of irrigation by their waters. The northern parts form *steppes*, which afford pasturage to the herds and flocks of the wandering Kirghiz; in the central region, along the Aral, are the two extensive sandy deserts of *Kara-koum* (black sand) and *Kizil-koum* (red sand); and, in the southern region, the wide-spread deserts of Turcomania, extending from the Caspian Sea, along the northern frontier of Khorassan.

PLAINS, VALLEYS, AND TABLE-LANDS.—On the northern side of the Altai range, and indeed over the whole of the northern part of Europe and Asia, the elevation of the ground is very inconsiderable. From the plains of Brabant, it is possible to travel eastward to the Steppes which border the western declivity of the Altai, and Chinese Zoungaria, from the Scheldt to the Lenisei, over 80 degrees of longitude, without meeting with a single elevation exceeding 1200, or 1300 feet; and even on the south side of the Altai, along the banks of the Upper Irtish, and the borders of Lake Zaisang, and through a great part of the steppe of the Kirghiz, the elevation has been found, by barometrical measurement, scarcely to exceed 1900 feet above the level of the sea. Of the countries lying farther south, between the Altai and the Himalayas, we have a very imperfect knowledge; but it is worthy of remark, that the countries situate between the Kwan-lun and the Teean-shan, have a general inclination from west to east; while the valley of Zoungaria, between the Teean-shan and the Altai, is inclined to the west; being closed on the east, beyond the meridian of Pekin, by the Khingkhanula, a mountainous crest, which runs S.S.W. and N.N.E., while to the west it is entirely open, on the side of the Tchoui, the Sarasou, and the lower Sihoon. It is quite otherwise with the country between the Himalayas and the Kwan-lun, which is closed to the west by the Bûlyt-tagh, which separates Little from Great Bukharia, and from Cashgar, Badakshan, and the Upper Jihoon or Amoodaria. The whole region, indeed, between the parallels of 30° and 50° N. lat., and between the meridians of the Bolor range and Lake Baikal, contains a vast extent of country, whose elevation probably does not exceed that of the plains of Bavaria, Spain, and Mysore.* There is, moreover, every reason to suppose, that plains of the same order of elevation as those of Quito and Titicaca, occur only in the bifurcation formed by the junction of the Himalayas and the Kwan-lun, in the group of mountains surrounding lake Hoho-nor, and in Gobi, to the north-west of the In-shan. But in the south-western portion of the continent there is a series of elevated table-lands, which form a characteristic feature, almost peculiar to Asia. The interior of the peninsular region, which extends from the Archipelago to the Caspian Sea, is occupied throughout nearly its whole length by the high regions of Phrygia and Armenia, which are not indeed exactly a table-land, but consist rather of a series of valleys and plains, of various degrees of elevation, from about 2000 to 6000 feet above the level of the sea. The elevation of the plain of Kutahya is 6000 feet; of Sivas 3894; and of Erzroum, the capital of Turkish Armenia, 5600. The peninsula of Arabia is in like manner almost entirely occupied by table-lands, which, in the northern district, slope towards the Persian Gulf and the Euphrates; but their elevation is unknown, though, from the height of the bordering mountains, it may be conjectured to be between 3000 and 4000 feet. The interior of Persia is also occupied by a table-land, intersected by a network of mountains, and leaving only a very narrow border of lowland along the Persian Gulf, the Indian Ocean, and the Caspian Sea. The elevation generally exceeds 3000 feet, though at Koom it is so low as 2046. The city of Ispahan is situate in a valley 4140 feet, and Tehran in a plain 3786 feet above the level of the sea. India likewise contains several detached table-lands. The table-land of Taxila, which occupies the northern half of the Punjaub, has a considerable elevation; the table-land of Malwah, or Central India, supported on the south and west by the Vindhya and Aravulli mountains, has an elevation of about 2000 feet, but slopes north-eastward to the Jumna; the table-land of the Deccan, supported on the west by the Western Ghauts, has an elevation of about 2000 feet, but slopes considerably to the eastward, in which direction all its waters flow; the table-land of Mysore, in southern India, lying in the angle formed by the meeting of the Eastern and the Western Ghauts, has an elevation exceeding 3000 feet, but is of no very great importance.

But the most singular feature in the formation of the Asiatic continent is the depression of considerable portions of its surface below the general level of the ocean. The Caspian Sea, and a considerable tract of country around it, have been found, by levelling across the isthmus, to be about 81 or 82 English feet lower than the surface of the Black Sea. The depression of the Dead Sea, in Palestine, and the basin of the river Jordan, have been found, by barometrical measurements, to be still greater; but different observers vary in their estimates, from about 500 feet to 1400, as the amount of the depression below the level of the neighbouring Mediterranean. In these operations, however, the barometer seems to be a very deceptive instrument; for it indicates the depression of the Caspian to be more than 300 feet, while it is found, by levelling, to be only 81; probably the depression of the Dead Sea and the Jordan will be found to follow the same proportion. North-east of the Caspian and the Aral commences a very remarkable region of small lakes, comprising the groups of Balek-koul, and Koum-koul, which seems to indicate, at some remote era, the existence of a great mass of water in the interior of Siberia, communicating with the lakes Aksakal and Aral. It extends to the north-east, between the rivers Tobol and Ischim, and may be traced eastward beyond Omsk, through the steppe of Baraba, to Sourgout beyond the Obi, through the country of the Ostiaks of Beresov, and even to the marshy shores of the Arctic Ocean. The geological appearances of this tract render it probable that, formerly, it was entirely covered with a mass of water, of which the Caspian and the Aral are the most considerable remaining portions. The Chinese also have a tradition of the existence of a salt lake in the interior of Siberia, which traversed the course of the river Ienisei; and the salt plain which surrounds the oasis of Hami is expressively called by them the *Dried-up Sea* (Han-hai.)

SEAS, BAYS, GULFS.—1. In the Arctic Ocean: *Gulf of Ienisei* and *Gulf of Obi*, respectively the estuaries of these two great rivers. 2. In the Indian Ocean: the *Red Sea*, *Gulf of Arabia*, *Gulf of Oman*, *Persian Gulf*, *Arabian Sea*, *Bay of Bengal*, *Gulf of Martaban*. 3. In the Pacific Ocean: *Chinese Sea*, *Gulf of Siam*, *Gulf of Tonquin*, *Yellow Sea*, *Sea of Japan*, *Sea of Okhotsk*, *Gulf of Anadir*.

STRAITS.—*Strait of Babelmandel*, which connects the Red Sea with the Gulf of Arabia; *Strait of Malacca*, between Malaya and Sumatra; *Channel of Formosa* at the south, and *Strait of Formosa* along the west side of the island of the same name; *Bhering's* or *Behring's Strait*, at the north-eastern extremity of Asia, separating it from America.

RIVERS.—Asia contains some of the largest rivers in the world. They may be arranged in five classes, according as they flow into the seas and oceans which surround the continent, or into inland lakes. 1. The *Ienisei*, with its affluents the three *Tonguskas*; the *Obi*, with its affluents the *Irtish*, *Ischim*, and *Tobol*; the *Olenets*; the *Lena*; the *Indigirka*; and the *Kolima*; all flow to the Arctic Ocean. 2. The *Rioni*, and *Kizil-Irmak*, fall into the Black Sea; the *Sarabat* and *Meinder*, into the Archipelago; the *Aaxi* or *Orontes*, into the Levant. 3. The *Euphrates* and *Tigris*, *Indus*, *Ganges*, *Brahmapootra*, *Irawady*, *Saluen* or *Thaluen*, fall into the Indian Ocean. 4. The *Meinam*, *Maykaang* fall into the Chinese Sea; the *Yang-tse-kiang*, *Hoang* or *Whang-ho*, and *Amour* or *Saghalien*, into

* The plains of Bavaria are 1660; of Spain, 2240; of Mysore, 3000; Quito, 9000; and Titicaca, 13,000 feet (1986 toises) above the level of the sea.

the Pacific. 5. The *Ural* or *Jaik*, *Kur* and *Aras*, *Kizil sen*, to the Caspian; *Amú* or *Oxus*, and *Sihon* or *Jaxartes*, fall into the Sea of Aral; the *Chuee* or *Tchoui*, from the lake Ili or Ele, into lake Balkash; the rivers of *Yarkhand* and *Cashgar*, into the lake Lop; or, perhaps, as it is alleged, into the Whang-ho.

LAKES.—Asia contains the largest lake in the world, which, from its size and its saltness, has been dignified with the name of Sea. The CASPIAN SEA is situate in the western part of the continent, between 36° 35′ and 47° 25′ N. lat., and 46° 15′ and 55° 10′ E. long. Its greatest length along the meridian is about 760 miles, but measured in a curve line along the middle of its breadth, from its north-eastern extremity to the coast of Mazenderan, it exceeds 900; with an average breadth of 200. Its area is computed by Arrowsmith to be 118,000 square geographical miles, or nearly 160,000 square English miles. The Caspian is bordered on the north and north-west by the Russian empire; on the south and south-west by Persia; and on the east by Turkestan. The coast-line is irregular; but the only considerable bays are, the Gulf of Mertovi or Dead Gulf, in the north-east, and the Balkan on the east coast. The south and south-west coasts are closely hemmed in by lofty mountains, which in some places leave a narrow intervening strip of low land, and in others, particularly on the west coast, exhibit a precipitous rocky shore. On the north-west and north it is bordered by the low steppes of Astrakhan; and on the east by the sandy deserts of Turkestan, which present a series of high cliffs and sand-hills approaching close to the shore. Its depth is very variable. Along the north coast the water is very shallow for 20 miles from the land; along the east, west, and south shores, the depth is sometimes 150 feet; and at one place near the middle no bottom has been found at 2800 feet. In several places the bottom seems to descend by terraces. The water is less salt than that of the ocean, and particularly near the mouths of the rivers, but is somewhat more bitter. Its level has been found, by levelling across the isthmus, to be about 81 feet below that of the Black Sea; but the north and south winds exercise a powerful influence in varying the level of the water at its opposite ends. Hence its variations have a range of from four to eight feet, and strong currents are generated both with the rising and the falling of the wind. Some difference is also occasioned by the snow melting in summer; and the lake is said to be subject to periodical variations of an anomalous kind; increasing and decreasing in its bulk through periods of about 30 years. The islands which it contains are few and unimportant; and, for the most part, those which are elevated are without water and vegetation. The low islands are often mere sand-banks, overgrown with reeds. There are few deep and secure harbours; and, as the winds are liable to sudden changes, the navigation is rather dangerous: Baku is indeed the only harbour in which a vessel can ride with safety in stormy weather. The rivers which flow into it are the Volga or Wolga, the great drain of the south-eastern declivity of Russia; the Kouma, the Terek, the Kur, and the Aras, all from the declivities of Caucasus; the Kizilozen, and many others, from Persia; and the Ural, from the southern parts of the Ural mountains. The climate is less temperate than might be expected from the latitude; its northern gulfs are frozen in winter, and the ice at the mouth of the Volga does not break up till April. In the south, however, the summers are very hot and humid, and in consequence unhealthy, though productive of the most luxuriant vegetation in Mazenderan. The shores of the Caspian are frequented by multitudes of aquatic birds, as storks, herons, bitterns, spoonbills, geese, and ducks; and the waters abound with fish. The sturgeon is the principal object in the fisheries; but for delicate eating, the sterlet is preferred. There is also the beluga *(acipenser huso)*, which attains such an enormous size, that one is a heavy load for three horses. The Caspian likewise contains a species of seal, porpoises, salmon, and a kind of herring; indeed it has been remarked that it contains all the varieties of sea animals which are found in the Black Sea, except those which arrive in the latter periodically from the ocean for the purpose of spawning. The species of shells and sea plants are not numerous.

The SEA or LAKE of ARAL, to the eastward of the Caspian, is nearly a fourth part of its size; and, further east, are many smaller lakes of the same character, which receive rivers, but have no outlet. The principal of these are the *Balkashi-noor* or lake *Tenghiz*, the *Alak tou-gul*, the *Khassel-cash*, the *Ulen*, the *Aral-noor*, the lakes *Buteng* and *Lob*, the *Tengri-noor* and *Bouka-noor*, all in Central Asia; and the *Pangkung* in Thibet; towards the west are several of the same kind which are much better known, as the lakes of *Urumiah* and *Van* in Armenia; the great salt lake of *Koch-Hissar* in Asia-Minor; and the *Dead Sea* in Palestine. All these lakes, or seas, as they are sometimes called, are salt; the waters of some of them are intensely so, and even bitter. Of freshwater lakes, with outlets, the principal are: the *Baikal*, in Eastern Siberia; *Zaisang*, formed by the Irtish; the *Lake of Eriran*, in Armenia; the *Lake of Tiberias* or *Sea of Galilee*, in Palestine; the *Po-yang*, and *Tongting*, in China; the *Bhawanshad*, *Mana-arovara*, and *Paltee*, in Thibet.

ISLANDS.—The numerous islands of the *Archipelago*; *Cyprus* in the Levant; *Ceylon*, *Andaman*, and the *Nicobar islands*, in the Bay of Bengal; *Hainan*, and *Formosa*, in the Sea of China; the *Viju-coamu*, *Loo-choo*, *Japan*, and *Kurile* islands in the Pacific Ocean. To the south-east of Asia, between the Indian and the Pacific Oceans, is a multitudinous group of islands, which have usually been considered as belonging to Asia; but they have now been formed, along with the islands of the Pacific Ocean, into a new division of the globe, named OCEANIA or OCEANICA; and, though this classification is far from being unobjectionable, yet, as it has been adopted by most modern geographers, and has come into popular use, we shall adhere to it; the more particularly on this account, that if any of those islands are ascribed to Asia, it is difficult to draw a line of distinction between them and those whose inhabitants are fairly beyond the pale of Asiatic character and manners.

CLIMATE.—Nearly all the circumstances which unite in giving a mild climate to Europe, are reversed in the case of Asia. Its northern boundary extends beyond the parallel of 70°, and between the mouths of the Lenisei and the Lena, reaches even to 75°; it everywhere attains the winter limit of the polar ice, and during the short summer of these high latitudes, there is only a narrow belt of water between the ice and the land. The north winds, unobstructed by mountains, blow over a plain of ice, and their cooling influence is not counterbalanced by hot deserts of sand in the southern portion of the continent; there being no land under the equator, opposite the length of Asia, except the narrow strips of Sumatra, Borneo, Celebes, and Gilolo. Consequently, the Asiatic countries situate in the temperate zone, are not warmed by ascending currents of heated air, similar to those which rise from the deserts of Africa, and exert so beneficial an influence on the climate of Europe. The position of the great mountain chains, and the general elevation of the country, likewise contribute to diminish the temperature; the Himalayas and Kwan-lun presenting an effectual barrier to the warm winds in their progress from the equator, while the high plains and groups of mountains, which occupy the centre of the continent, retain the snow till late in the summer, and produce descending currents of air which lower the temperature of the surrounding countries. There is, moreover, no sea of any considerable extent on the western side, and consequently, the western, or predominating winds, are land winds, whose severity is increased by the great enlargement of the continent towards the north. The result of all these circumstances is, that the eastern part of Europe, and the whole of Asia to the north of the 35° N. lat. have what Humboldt calls an *excessive* climate, meaning by that term, a climate in which the temperatures of summer and winter differ greatly from the mean temperature of the year, or, in plainer language, where the winter is excessively cold, and the summer excessively hot. In Europe, on the contrary, there is less difference between the temperatures of summer and winter, and both approach nearer the mean temperature of the year.

The height of the snow-line on the mountains of Asia has hitherto been very imperfectly determined; but in a general view, it may be regarded as much greater than in Europe, or even in America, under the same parallel. It appears, from the Report of Messrs. Lenz and Kupfer to the Imperial Academy of St. Petersburg in 1829, that the limit of perpetual snow on Mount Elbûrz is 11,000 English feet, while on the Pyrenees, under the same latitude, it is, according to Ramond, at the height of only 8690 feet. The great influence of local circumstances on the position of the snow-line, is strikingly exemplified in the case of the Himalayas. On the south side of these mountains, under the parallel of 30° or 31°, the snow line is estimated at 12,400 feet; while on the north side, towards Thibet, snow disappears in summer at the enormous height of more than 20,000 feet. This remarkable difference is ascribed by Humboldt to the powerful radiation which takes place in summer from the high plains of Thibet, to the small quantity of snow which falls in winter, when the temperature sinks below 10° of Fahrenheit, and to the serenity and clearness of the atmosphere on the northern side of the mountain chain; circumstances which, at the same time, increase the radiation from the plains, and facilitate the transmission of the heat to the higher regions.

The effect of the very diversified local circumstances of the Asiatic continent, an example of which we have just now given, is such, that its *physical climates*, generally speaking, seldom correspond to the astronomical climates.

MINERALS.—There is no precious or useful mineral which is not found in this immense continent. The following table exhibits the countries which are most distinguished for their mineral wealth.

Mineralogical Table of Asia.

DIAMONDS:—*India*, kingdom of the Nizam, Baladghaut region, Bundelcund, Sumbhulpour, Gundur, Ceylon; *Asiatic Russia*, Perm and Orenburg.

OTHER PRECIOUS STONES:—*Birmah; Siam; India; Asiatic Russia*, Perm, Orenburg, Tomsk, Irkutsk, &c.; *Chinese empire*, China, &c.; *Persia*, Khorassan, &c.; *Independent Turkestan*, Badakshan.

GOLD:—*Japan*, Niphon, Sado, &c.; *Chinese empire*, Thibet, Yunnan, &c., country of the Lolos, Hainan; *Asiatic Russia*, Perm, Orenburg, Tomsk, &c.; *Birmah; Annam*, Tonkin, Cochin China, &c.; *Siam; Malaya; Assam*, &c.

SILVER:—*China; Russia*, Tomsk, Irkutsk, &c.; *Japan*, Bungo; *Ottoman empire*, Armenia, Asia Minor.

TIN:—*Birmah; Siam; Malaya*, Ligor, Queda, Selenga, &c.; *China; Annam*.

MERCURY:—*China; Thibet; Japan; India; Ceylon*.

COPPER:—*Japan*, Sourounga, Atsingo, Kuno-kuoni, &c; *Russia*, Perm, Orenburg, Tomsk, Georgia, &c.; *Ottoman empire*, Asia Minor, Armenia; *Chinese empire*, Yunnan, Kouei-cheou, Thibet; *Annam; India*; Nepaul, Agra, Ajimere, Nellore, &c.; *Persia*, Azerbijan.

IRON:—*Russia*, Perm, Orenburg, Tomsk, Irkutsk; *India*, Cashmere, Nepaul, Bengal, Bahar, Oude, Agra, Berar, Nellore; *China*, Shensi, Thibet, Bootan; *Siam; Annam*, Tonkin, &c.; *Ottoman empire*, Diyarbekr; *Affghanistan; Seik territory*, Peshawer; *Persia*, Fars; *Japan*.

LEAD:—*China; Russia*, Irkutsk, Tomsk, Georgia; *Siam; Japan*, Jeso; *Persia*, Fars; *Arabia*, Muscat; *Ottoman empire*, Asia Minor, Armenia.

COAL:—*Chinese empire*, the northern provinces of China; *Ottoman empire*, Syria, near Beyroot, &c.; *India*, Bengal, Cutch. Valley of the Nerbuddah, &c.

SALT:—*Chinese empire*, Pe-che-le, and other provinces of China proper; *India*, Gujerat, Ajimere, Bengal, Lahore, Allahabad, Agra, Orissa, Coromandel, Arracan, Ceylon, &c.; *Russia*, Steppe of Ischim, Baraba, &c., lakes of Koriakov, not far from the Irtish, lake Inder, &c., Shirwan, Armenia, &c.; *Persia; Arabia*, Yeman; *Ottoman empire*, Anatolia, Cyprus, &c.

VEGETATION.—The vegetation is extremely rich and various. All the natural families of plants appear to have representatives in Asia, for the vast extent of the continent includes climates of the most opposite character. From the lowly vegetation which composes the Arctic flora, to the gigantic trees and generally luxuriant vegetation of the Indian regions, we find in Asia every intermediate kind. Sometimes the extremes appear to exist even in the same country; for example, where the Himalayas present an Arctic vegetation in their higher regions, while, not far below, the vegetation of warm climates is found in full luxuriance. But most of the countries of Asia have a homogeneous and characteristic vegetation of their own. To attempt, however, to particularise them, would be an idle work; the bare enumeration of them might fill our volume, but would contribute little to the edification of our readers. We shall, therefore, confine our notice here to a few plants of the highest value, not only in the countries which produce them, but in the most distant regions of the earth.

Of all the productions of the vegetable kingdom, that which has been the greatest favourite with man in every age, is the *vine;* the juice of which is a beverage sought after in every country which civilization has reached. It is not, however, a very general production of the earth; the cultivation of it is confined to narrow limits, for excess of heat seems as unfavourable to its growth as too much cold. Its southern limit is where the mean temperature of the climate is between 69° 8′ and 71° 6′ Fahrenheit; and its northern limit, 47½° or 48°, where the temperature of the coldest month does not fall below 34°. It is only within the middle regions of the temperate zone that the vine comes to perfection, but within those limits it is found throughout western Asia. The finest grapes are produced in Asia Minor, Syria, and Palestine; but the vine is still found in its wild and native state in the forests of the ancient Colchis (at the eastern end of the Black Sea), climbing to the tops of the loftiest trees. Farther east the grapes and the wines of Shiraz and Mazanderan enjoy the highest repute in Persia. Vines are also found native along the upper banks of the Oxus, in Kashgar to the east of the Belur, in Kunawar, the British portion of Little Thibet, and also in Malwah or Central India. They are also cultivated in the gardens of H'lassa in Great Thibet; and, in China, on the shores of the Eastern Ocean, the vine is as plentiful, and the luxury of wine-drinking is as highly appreciated as in Europe. In France, Germany, and Hungary, the vine is the produce of art; farther south, and in the regions emphatically called *the East*, the vines are to be seen in their full native luxuriance, as delightful to the eye, as their produce is grateful to the palate. In all ages the vine has been a favourite theme with the poets of the East. The wine-bibbing Anacreon is notorious, and Hafiz, the national lyric poet of Persia, avows himself a most devoted admirer of this glorious beverage; and, indeed, the wine of Shiraz, the place of his birth and of his burial, is so highly esteemed, that the Persians say, that if Mohammed (who forbade the use of wine to his disciples) had tasted the pleasures of Shiraz, he would have prayed God to make him immortal there.

Next in repute to the vine is the olive, which is likewise confined to temperate climates, and is indigenous to *Syria*, along the eastern shores of the Black Sea, and at Tukht-i-Suleiman, near the Indus. The cultivated olive is easily reared in all parts along the shores of the Levant which are free from the visitation of frosty winds. It produces a very fine oil, which is in general use in all the countries where it is grown, and the history of the tree appears to be as old as the human race; for it was the leaf of an olive tree plucked off that Noah's dove brought to him in the ark.

Tea, which affords a wholesome and exhilarating beverage to all the nations of the eastern, central, and northern regions of Asia, and has become a necessary of life in Britain, is produced abundantly

in the southern provinces of *China;* the best is grown upon the hills of the province of *Fuki-en*. It has also been lately discovered to be indigenous in *Assam*, within the limits of the British territories, and has been found to be perfectly adapted to the soil and climate of the Nilgherries in Southern India.

Rice is a necessary, and indeed the very staff of life, to the Hindoos, Indo-Chinese, and Chinese, who value it so highly, that they pity the Europeans for having no rice at home, and wonder how they can exist without it. It is produced abundantly in the well-watered plains of those countries, and requires great heat as well as abundant moisture to bring it to perfection. The same character is enjoyed by the date-tree in Arabia, and the neighbouring hot and sandy countries of the south-west. Its fruit there forms a principal article of food; and the simple people wonder how Europeans contrive to live without it. But for more detailed accounts of these and of the other vegetable productions of Asia, we refer to our special descriptions of the countries into which the continent is divided.

ANIMALS.—The mountains of Asia divide the continent into three zones, and this geological character of the country affects the distribution of the animals. In the central zone, which is composed of high mountains, or extensive sandy plains, we find, the Bactrian, or double-humped camel, the *tarpan*, or wild horse, the *jaghatai*, another species of horse so fleet, that the Mongols designate them the coursers of the sun; several kinds of horse-tailed beeves, whose flowing tails are the ensigns of military rank throughout all the east; at least two species of antelopes, the *zeren* or yellow buck, which is as fleet as the jaghatai, and the *saiga*, which is almost blind. Panthers are found in the western regions; and also a singular species of cat, the *manul*, the original of the Angora cats. The Indian tiger has been seen in Siberia, even as far north as the head of the Obi; it is still common in Mazanderan and Azerbijan; and appears to range northward to the borders of the Keroulun and Orchon in the country of the Khalkas, and as far as the Altai. Tigers likewise abound in China, and those which appear occasionally in Siberia, are natives of Mongolia, where they are hunted every year by the Emperor of China. Troops of several species of dogs, jackals, and wolves, prey upon the antelopes, asses, and wild horses. All the mountains are inhabited by the musk animal; the Altai by the *argali* or Siberian rock sheep; the southern mountains by the *egagre* or wild goat; Caucasus by the egagre and the chamois. The western prolongation of this zone, which extends through Persia and Arabia, is overrun by antelopes and gazelles; lions, panthers, caracals, and other sorts of cats, jackals, and monkeys. The mountains and table-lands produce also the *onager*, or wild ass, the original of those beautiful and fleet asses so much esteemed in the east. The single-humped or proper camel, is the aboriginal native of Arabia only, but is found also wherever the Arabs have settled.

In the northern zone, the river-banks, and the vast forests of Siberia harbour innumerable troops of rein-deer, elks, brown, blue, and black foxes, bears, gluttons, and several species of martins and squirrels. Along the shores of the Arctic Ocean the great polar bear preys on every living creature. In the waters of the ocean are found seals and various kinds of cetacea. The lake Baikal, in spite of its fresh water, and its great distance from the sea, has also, like the Caspian, its particular species of seals.

In the southern zone every region teems with life. In India are several species of antelopes and deer, which were till within these few years unknown in Europe. In Thibet are swarms of blue antelopes whose horns, which fall annually, have more than once reminded English authors of the fabulous unicorn. There is also found the *Chitkara*, with four horns. In Bengal are the charming white spotted *axis;* in the forests of Orissa is found the *jungle-cow*, the wild original of the domestic beeves of India. In India there are few lions; but numerous fierce tigers ravage this, and the warm countries further east and south. Over the same regions is spread the black-skinned, half naked buffalo, with horns turned back, both wild and tame, delighting in the muddy banks of the seas, lakes, and rivers. Between the Ganges and the Indus the forests abound with squirrels, peacocks, pheasants, and jungle-cocks. Several species of bears, one of which was for a long time considered to be a sloth, inhabit the forests among the Ghauts. The *elephant* and the *one-horned rhinoceros* live in the forests, but it is in the countries S.E. of India that these animals attain their largest size. There also are found the two-coloured *tapir*, which ranges from Malacca to the southern provinces of China; *ourangs, gibbons*, and various other kinds of monkeys. In the Ganges alone 250 kinds of fish have been described by Buchanan, which furnish abundant food for the alligators with which its waters abound.

The birds are various in every zone, and adorned with rich plumage. Gigantic vultures tyrannize over the banks of the Indus, where are likewise found great numbers of eagles, falcons, buzzards, and screech-owls. Swarms of parroquets, of every variety of colour, inhabit the continent and the neighbouring islands.

Of domestic animals the elephant claims the pre-eminence, and is confined chiefly to the lowlands of India, Birmah, and Siam, being seldom seen in the mountainous region to the north. The camel is found over a far wider extent of country; it consists of two species, the one with two humps, the other with only one. The former, usually called the Bactrian camel, is comparatively rare, and seems to be indigenous to the great deserts of north-eastern Asia, and the table-land of Pamer, being only to be found in the south-west when taken thither by travellers. The one-humped species, usually misnamed the dromedary, is, on the contrary, the real camel, and is spread over Arabia, Persia, western India, and northern Africa, where it is the common beast of burden. The dromedary, properly so called, or racing camel, is only a variety of this latter species, is generally of a lighter form, and better adapted for rapid travelling or flight. The other domestic animals of southern and western Asia, are horses, mules, asses, buffaloes, beeves, sheep, and goats; of the central and eastern regions, chiefly horses, cattle, and sheep; the yak of Thibet and Pamer, and the bushy-tailed bull of Thibet seem to supply the place of the camel among the mountains, where they are used as beasts of burden. In the rigorous climates farther north, where the cattle become stunted in size, and can scarcely subsist, their place is supplied by the rein-deer, which furnishes the people both with food, and with the means of transport. During part of the year they subsist upon its flesh and milk; its skin furnishes them with the principal part of their dress, and its horns with various utensils. In Kamtschatka, and the other north-eastern regions, dogs are trained to draw sledges in winter over the frozen snow.

The southern countries of Asia produce reptiles, many of which are armed with the most fatal poisons; they are all hideous to the sight, and some of them are of prodigious size and muscular strength; but they are scarcely found beyond the Altai. All sorts of insects, as musquitoes, gnats, ants, flies, most of them noxious and destructive, swarm in the southern regions; even during the short summer so: the north the mosquito and other troublesome insects abound in the woody regions of Siberia. But the most mischievous of all these winged creatures is the locust, which appears occasionally in the sandy regions north-west of India; and is found in countless swarms in Arabia and Syria. It is also frequently found to the north of the Altai, at the sources of the Irtish, whence it extends its destructive flight as far as the Crimea and the southern provinces of Russia in Europe.

PEOPLE.—Asia contains a great variety of tribes and nations, most of which will be enumerated in the subsequent table. Of these the five principal races, the Hindoos, the Chinese, the Tatars or Tartars, the Arabs, and the Persians, seem to have divided among them as a kind of inheritance, the continent and the adjoining islands, and still occupy the greater part of them. The origin of these races

is buried in the most remote antiquity, and has formed a very fertile subject of discussion among antiquarian philologists and physiologists. The Hindoos and the Arabs are generally considered as belonging to the Caucasian or white race of mankind, though, in respect of language, they are entirely different; the former appearing to be allied to that family whose various dialects have been classed together as the Indo-Germanic, and who seem to have spread from a common centre, somewhere in south-western Asia, into Europe on the one side, and Persia and India on the other; while the Arabs, on the contrary, belong to the Semitic family, who seem to have been always confined to the great peninsular region, which extends from the mountain ranges of Taurus and Zagrus to the Mediterranean and Red Seas, the Persian Gulf, and the Indian Ocean. The ancient Medes and Persians seem to have belonged to the Indo-Germanic family and to the Caucasian variety; but the modern Persians are a very mixed race, formed by the commingling of Persians, Arabs, Turks, Tartars, Mongols, and natives of the Caucasian Isthmus. The Tatars or Tartars differ entirely from the Hindoos and the Arabs in features, complexion, and form, as well as in manners and language. They all speak the Turkee or Turkish language, and form the majority of the population of Turkestan, the western part of Chinese Tartary, and the southern provinces of Russia; are spread in various tribes throughout Persia; and constitute the original stock of the Osmanlee or Ottoman Turks, who have long been the dominant people of south-western Asia. It has been doubted whether the Osmanlee are of the Caucasian or of the Mongolian variety; but some of the other branches of the family, who speak the purest Turkish dialects, are unquestionably Mongolian; though they must be distinguished from the Eastern Mongols, who speak languages apparently of different origin. The Chinese, according to the institutes of Menu, were originally a military tribe of Hindoos, who, abandoning the ordinances of Brahma, migrated eastward, and laid the foundation of the Chinese empire; but this theory seems to be extremely improbable. The Chinese are unquestionably of the Mongolian variety; and their monosyllabic language and figurative alphabets seem to have no analogy with any of the languages or alphabets of India. According to M. Balbi, all the nations and tribes of Asia may be classified according to their languages, as in the following

TABLE.

The SEMITIC FAMILY.—The *Jews*, who are scattered over a great part of Asia, but are found in the greatest numbers in Ottoman Asia and Arabia. Many are also met with in India, Persia, Turkestan, and China. The *Arabs*, who are the most numerous and powerful branch of this family, occupy nearly the whole of Arabia, the greater part of Syria and Mesopotamia, with parts of Khuzistan and Fars in Persia; they have likewise several settlements on the coasts of Malabar and Coromandel, in Turkestan, and in the regions of the Caucasus.

GEORGIAN FAMILY.—The *Georgians*, in Georgia and Imeritia; the *Mingrelians*, the *Sevanes*, and the *Lazes*, at the eastern extremity of the Black Sea.

ARMENIAN FAMILY.—The *Haikans*, commonly called Armenians, form the great mass of the population of Armenia; they are also numerous in Georgia, Shirwan, and Azerbijan; and are scattered, besides, through all the commercial cities of Turkey, Persia, India, Turkestan, and even in some parts of China. The *Abasses* or *Abme*, who inhabit Abakhasethi, or the Great Abassie; several tribes of whom are vassals of Russia. The *Natoukhashi*, one tribe of whom are notorious for their predatory habits.

PERSIAN FAMILY.—The *Pernans*, *Parsees* or *Guebers*, of whom the greater number are settled in Gujerat and Konkan in India, and in Yezd in Iran. They are found also in smaller numbers in Kerman, Moultan, and at Baku in Shirwan. The *Tavjiks*, better known under the name of *Iranes* (pronounced *Eerawnee*) or *Persians*, who are believed to be the descendants of the original Arab conquerors who overspread Persia during the most brilliant period of Islam prosperity, form the principal mass of the population of Iran, and are likewise the most numerous and polished nation of this family. The *Bukharians*, who are the indigenous people of Great Bukharia, and of the principal towns of Chinese Turkestan. They are also found dispersed as merchants in the large town of Siberia, Central Asia, and China. The *Kurds*, and the *Lourees*, in Kurdistan and Louristan. The *Affghans* or *Poushtaneh*, in Affghanistan and the north-western parts of India, and in Rohilcund, in the north-east of India. The *Belootshees*, who possess the south-eastern parts of old Persia and the country of Sinde, on the lower part of the Indus.

HINDOO FAMILY.—This is one of the most numerous families on the globe. Their habitat extends over the whole of India, to the north of the Tuptee and Godavery. The principal branches of this family are: The *Moguls*, originally composed of Turks, Bukharians, and Persians, who speak the Hindoostanee language, and originally formed the ruling class in the Mogul empire; they are found principally in Hindoostan or Northern India. The *Seikhs*, the ruling people of north-western India; the *Bengalees*, who form the mass of the people of Bengal, and some parts of the bordering provinces; the *Mahrattas* who occupy the western part of the Deccan, and parts of Mahra, Khandeish, and Gujerat; the *Singalese*, in Ceylon; the people of the *Maldives*; the *Zinganees* or *Gipseys*, a numerous tribe scattered over Europe and Western Asia, and found also in some parts of Northern India.

MALABAR FAMILY.—This family comprehends the people who inhabit that part of India which lies between Cape Comorin and the Tuptee and Godavery. The principal branches are: the *Malabars*; the *Tamul*, who inhabit the Carnatic; the *Telinga* or *Teloogoo*, who extend from Pulicat to Orissa.

The *Garrows*, the *Kathes*, the *Gonds*, the *Bheels*, and other tribes, who have dwelt from time immemorial in India, do not belong to the families which form the great mass of the people of that country. They are more or less distinguished by their savage and barbarous customs.

THE CHINESE FAMILY are the most numerous on the globe. The *Chinese* form nearly the entire population of China; they are also settled along the coasts of Hainan and the west coast of Formosa, in Siam, Malacca, Singapore, Penang, Ceylon, Calcutta, Mauritius, and have even found their way to Brazil. The *Mianmai*, or *Miajamma*, or *Birmans*, are the principal occupants of the basin of the Irrawady. The *Moans* or *Peguans* inhabit Pegu. The *Tai* or *Tai-nai* (pronounced *Tie*), called also *Laos*, *Shyans*, *Shans*, and *Siamese*, are the ruling people of Siam, and occupy the whole of Laos. The *Annamites*, subdivided into *Tongkinese*, who are the most numerous, and *Cochin-Chinese*, who have become the ruling people of the empire of Annam. The *Sian-pi* or *Coreans*.

THE JAPANESE FAMILY, spread over all the empire of Japan, where they form nearly the entire population. In respect of power and civilization, they occupy the first rank among the Asiatics. The *Loochooans* are a branch of the same stock.

The *Miaotees*, the *Lolos*, the *Mientings*, are numerous tribes who are found in China, but do not belong to the Chinese stock. The inland savages of Hainan, the *Kemoys* in the mountains which separate Laos from Cochin-China; the *Play* or *Karens* in Birmah, are other savage tribes unconnected with the more civilised nations among whom they live.

The TUNGOUSE FAMILY.—The *Tungouses*, subdivided into *Mandchews*, and the proper *Tungouses*. The former have been, since 1664, the ruling class in China, and are very advanced in civilization. They form one half of the inhabitants of Liaotung, and the entire population of Mandchusia, as far as the confluence of the Oussuri and the Amour. The proper Tungouses, who are inferior to the others in civilization, are confined to the Russian empire, where they are spread over the third part of Siberia, from the Lenisei to the sea of Okhotsk. The Mandchews present a remarkable phenomenon in

the history of civilization. It is scarcely 250 years since they were nomades, ignorant of the elementary arts of reading and writing, whereas they now possess a rich literature, particularly valuable for the knowledge of the literature of China, which they have communicated through the medium of translations from the original works. It is the Mandchew, and not the Chinese, which forms the language of the Court of Pekin.

The MONGOLIAN FAMILY.—*Mongols, Kalmucks,* and *Burates.* The Mongols, subdivided into *Mongols* properly so called, *Khalkas,* and *Sharaigol,* or *Mongols* of Thibet, occupy Mongolia and a part of Thibet, along with Hoh-nor, in the Chinese empire. Some of them are also found in Asiatic Russia. The *Kalmucks* or *Olet* inhabit a great part of Soongaria. The *Burates* are found in the government of Irkutsk.

The TURKEE FAMILY.—The *Osmanlee,* or *Othmanlee,* or *Othman* or *Ottoman Turks,* are the dominant people in the Ottoman empire, and the principal and most civilized branch of this family. They are most numerous in Asia Minor. The *Usbecks,* or *Uzbecks* or *Uzbegs,* are the dominant race in Independent Turkestan. The *Turks* of Siberia, or *Touralians,* who are the pretended *Tartars* of Siberia, or *Touranian Tartars* of geographers, are spread over the governments of Tobolsk, Tomsk, and Irkutsk. The *Turcomans,* subdivided into a large number of stocks and branches, are spread over Affghanistan, Turkestan, Ottoman and Russian Asia. In Persia they have for more than a century been the dominant race. The *Kirghiz,* subdivided into *Bourouts* or Eastern, and *Kazak* or Western. A part of the Bourouts are tributaries of China; the greater part of the Kazaks are vassals of Russia; the remainder are independent. The numerous tribes which have been named appear to speak dialects of the Turkee language. The following tribes speak kindred languages: the *Sakha* or *Yakoutes,* in Ienisseisk and Yakoutsk, the most eastern and northern of all the people of this family, and also the least civilized; the *Tshouwashes,* named improperly *Mountain Tartars* by the Russians, wander over a part of Orenburg.

The SAMOIED FAMILY.—The *Tawghi,* extending from the Ienissei to the Lena, are the most northern people of the old world. The *Ouriangkhai* are the most southern tribe of this family. The most of them are found within the Chinese empire, between the Syanian mountains and those of Altai and Khangai; the rest are found in Russia.

The IENISSEIAN FAMILY.—The different tribes of this family are usually confounded by geographers with the Ostiaks, who belong to the Finnish stock. They are chiefly confined to the government of Ienisseisk; the *Denka,* the *Imbask,* the *Toumpokolsk,* the *Kottes,* and the *Assanes,* are the principal tribes.

The KORIAK FAMILY comprises only the small and savage tribe of this name, which is found at the north-east of Asia, in the districts of Okhotsk, Kamtschatka, and the country of the *Tshouktsi.* (Chuckchee.)

The ANDON-DOMSI or YOUKAGHIRES, are a scanty race, whose tribes inhabit the country between the Yakoutes and the Koriaks, along the Icy Ocean, from the Iana to the Kolyma.

The KAMTSCHATDALE FAMILY, very few in number, and chiefly fish-eaters, occupy the peninsula of Kamtschatka.

The KURILIAN FAMILY.—The *Kurilians* or *Kuriles* inhabit the Kurile islands and the southern point of Kamtschatka. The *Ainos* or *Iesos* occupy the island of Iesso. The *Tarakai* or *Ainos* of Tarakai or Soghalien; the *Giliaki* occupy that part of Mandchuria to the east of the Oussouri, and are named *Fuka,* or *Kedjen,* by the Mandchews.

The URALIAN or TSCHUDE FAMILY.—The *Vaugules* or *Mansi,* who are found between Kourgan and Beresov, in the government of Tobolsk; the *Ostiaks,* distinguished as the *As-Iakh* or *Ostiaks of the Obi, the Ostiaks of Kirsnor, of Iougan, of Narym,* &c.

THE MALAISIAN FAMILY; the aboriginal natives of Formosa: the *Malays,* who form the principal part of the population of the peninsula of Malacca, and the neighbouring islands. We must, however, except the mountains in the interior of the peninsula, which are inhabited by a negro race of an entirely different origin.

Besides these native Asiatic families there are numerous colonies of Europeans in most parts of Asia; *Greeks* in the Ottoman empire; *Russians* in Siberia; *English, Scotch, Irish, Portuguese,* and a few *French,* and *Danes,* in India; *Dutch* in Ceylon, Java, and the Moluccas; *Spaniards* in the Philippines.

GOVERNMENT.—If we understand by a *despot* an absolute monarch, who disposes of the property, the honour, and the lives of his subjects, employing them with indefinite and uncontrouled authority, we nowhere in the civilized states of Eastern Asia find sovereigns of this kind, notwithstanding all the declamations to which the governments of those countries have been subjected. Everywhere manners, ancient customs, received opinions, and even errors, form more embarrassing restraints upon power than written stipulations, which tyrants can so easily get rid of by force or fraud. It is only in some Moslem states, and particularly in Persia, that we meet with the most hateful despotism, and that degrading servility which has been usually attributed to all the nations of Asia. The kings of Asia have been taken for despots because they are approached on the bended knee. They have, indeed, assumed to themselves the titles of gods upon earth, vicegerents of Allah, brothers of the Sun and Moon, asylums of the universe, and similar designations, and they have been considered as such, without obstacles opposed to their *will* by religion, customs, manners, and prejudices being taken into account. The governments of Ottoman Asia, Persia, Russia, Bukharia, and others in Turkestan, India, Chin-India, China, Japan, and some of the islands are despotisms, differing in degree.

Besides the ancient republics, established in the Greek cities of Asia, and in Syria and Palestine, we find in the centre of the continent, tribes whose political institutions are pre-eminently republican. The principal of these are the Affghans between India and Persia.

Asia likewise contains many nations whose governments may be compared to those of the European kingdoms of the middle ages; such were the Mahrattas before the downfall of the Peishwa, and the Affghans before the late subversion of the kingdom of Kabul; and such are still the Beloutshees, the Mongols, the Kalmucks, the Mandchews, several Turkee tribes, and some nations of Caucasus, particularly the Circassians and Abassians. Even the empire of Japan is, properly speaking, nothing else than a feudal monarchy, ruled by a prince, who may be compared to the French mayors of the palace. Some nations are entirely free, as the Bedwin Arabs, the Kurds, and several tribes of Caucasus and Syria. The small nomadic nations of Asia, and many of the Arab tribes have a pastoral or patriarchal government, which is generally hereditary in certain families; others are governed by the elders, and form republics. Thibet, Boutan, and parts of Arabia, have a sort of theocratic government. The imams of Sanaa and Muskat are a sort of political high priests invested with temporal power, while the rulers of Thibet and Boutan are absolute pontiffs, bearing the titles of Dalai-lama, Bogdo-lama, and Dharma-lama, and are considered as emanations of the Deity himself. In general we may say that Asia affords examples of every possible kind of government, from the most licentious republicanism to the most atrocious despotism.

DIVISIONS. In the following description of the different countries of Asia, we shall consider them under the following heads:—*Ottoman Asia* or *Turkey; Arabia; Persia; Affghanistan; Beloochistan; India; South-eastern Peninsula; Chinese empire; Turkestan; Russian Asia; Japan.*

TURKEY, OR OTTOMAN ASIA.

ASTRONOMICAL POSITION.—Between 30° and 42° N. latitude, and 26° and 49° E. longitude.

DIMENSIONS. — The greatest extent of Turkey in the direction of the meridian, from north to south, is about 850 miles, and from east to west, about 1200; but, measured diagonally, from Constantinople to the mouth of the Euphrates, the extent is 1400 miles, and from the southern border of Palestine to the north-eastern extremity of Turkish Armenia, about 1100. The area, however, by no means corresponds with a square of these dimensions; for the outline is so much indented by seas on the one side, and by the sandy deserts of Arabia on the other, that the superficial extent hardly exceeds one-half of that square, or about 500,000 square English miles.

BOUNDARIES.—*Northern*:—The Black Sea and the Russian province of Imeritia. *Southern and South-western*:—Arabia and the Mediterranean Sea. *Eastern*:—Persia and Russian Armenia. *Western*:—The Archipaligo, Dardanelles, Sea of Marmora, and Channel of Constantinople.

GENERAL ASPECT AND CLIMATE.—This extensive region consists of at least three portions, which are geographically distinct, namely, *Asia Minor* and *Armenia; Mesopotamia, Assyria* and *the low countries watered by the Euphrates and Tigris;* and *Syria*, including *Palestine* or *the Holy Land.*

Armenia and the northern part of Kurdistan, form an elevated table-land, or series of plains and valleys, some of which are 5500 feet above the level of the sea, intersected and overtopped by ranges of mountains several thousand feet higher. This table-land is, however, a fertile corn country, and abounds also in pastures, though the climate is cold, and in winter the country is covered with deep snow. It is separated from the low country on the Black Sea, in the eyalet of Trebisond, by a triple range of mountains, which attain their extreme elevation of 6000 or 7000 feet, at the distance of twenty-four miles from the sea, and are covered with forests to the height of about 4500 feet; but, farther up, the country in general is bare of trees, except in some recesses of the mountains, where forests exist, even in the more elevated central parts. The passes from the coast are numerous; but, with the exception of those which follow the courses of the larger rivers, they are difficult, and many of them are open only in summer. The soil is for the most part fertile, and the country well watered. From Armenia two ranges of mountains proceed westward into the peninsula of Asia Minor; the one the ancient *Taurus*, which stretches parallel to the shore of the Mediterranean Sea, and then dividing into a number of branches, which intersect the western part of the peninsula, and form as many fertile valleys, watered by fine rivers, terminates on the shore, or in the islands, of the Archipelago. The other chain, *Anti-Taurus*, extends into the interior of the peninsula in a south-westerly direction, and is probably connected with Taurus in the neighbourhood of Kaisariyah, and also with the lofty mountains which, under various names, occupy the country between the Kizil-Irmak and the Sea of Marmora. The central part of the peninsula, supported on all sides by these mountains, forms a series of elevated table-lands, nearly destitute of trees, but abounding with pasturage, which affords a plentiful subsistence to the flocks of the wandering Turcomans. The plain of Kutahya is 6000 feet above the level of the sea; and that of Sivas, 350 miles farther east, about 3900. Some of the valleys are so completely surrounded by mountains as to have no outlet for their waters, which, in consequence, not only overflow large tracts of country in the rainy season, but also form a number of permanent lakes. The south coast presents an irregular outline, with a very bold front to the sea; an almost continuous mass of lofty mountains presses close upon the shore, and at some points forms the coast, terminating in bold promontories. Near the eastern end, however, the mountains are distant from the sea, and leave room for the wide plains of the ancient Cilicia. The west coast presents a very irregular outline, consisting of deep bays, with long peninsulas, promontories, and islands. The northern coast, along the Black Sea, is also lofty and rocky, with deep water close to the shore, and is lined with ranges of mountains at no great distance inland, covered with trees; the forests of which are so extensive, that, in one place, the Turks have given them the expressive designation of *Agatch-denyis*, sea of trees. The nucleus of some of these mountain chains seems to consist of granite and other primary rocks; but in various places these are associated with beds of marble and quartz rock, hippurite limestone, and schists; tertiary and lacustrine marine deposits, ancient and modern igneous rocks, and recent aqueous accumulations. The micaceous schist and associated rocks occupy, however, a very important place in the geology of Asia Minor, and form nearly all the mountain chains which intersect the western portion of the peninsula. The hippurite limestone, the only representative of that vast system of rocks which occupies a large portion of Europe, and is usually termed secondary, is even sparingly displayed in the north-western part of Asia Minor. Tertiary lacustrine formations occur in almost every valley, and marine deposits are found in several places. Volcanic rocks are of frequent occurrence; trachyte is abundantly scattered over the western part of Asia Minor; the whole country between Is nik and Kutahya appears to consist of agate or chalcedony, the strata being beautifully varied; and, in the centre of the peninsula, the lofty peak of *Arjish-dagh* (anc. *Argæus*) which rises to the great elevation of 13,000 feet, consists entirely of volcanic rocks and scoriaceous cinders, having its sloping sides studded all round with numerous cones and craters. *Hasan-dagh*, to the south-west of Arjish, is also volcanic, and rises to the height of 8000 feet; and 90 miles east of Smyrna, *Kulah*, a volcanic peak, rises to 2780. But the most singular portion of Asia Minor is the volcanic district of *Katakecaumené*, or the burned-up region, about 90 miles eastward of Smyrna, which bears a striking resemblance to the volcanic region of Auvergne. It extends about 19 miles east and west, and about 8 from north to south, and consists of volcanic mounds, which rise partly amidst the lacustrine limestone of the valley of the Hermus, and partly on the slope of the schistose hills which bound it on the south. The mounds consist of

scorise and lava, and are referable to two epochs, indicated by the difference in their state of preservation, and the appearance of the lava streams. The older cones are low and flat; their craters have disappeared, or are marked by a slight depression, and all their prominences seem to have been smoothed by time. They are also covered with vineyards, which produce the Katakecaumene wine, celebrated from the time of Strabo to the present day; and the streams of basalt or lava which have flowed from them are level on the surface, and covered with turf. The newer volcanoes, only three in number, though they have been extinct for more than 3000 years, preserve all their characters unaltered; the craters are perfectly defined, and their lava streams are black, rugged, and barren.—(*Hamilton, Trans. Royal Geological Society, Lond.*)

It, says Mr. Fellows, a line b drawn upon the map to include the elevated table-land of the interior, and the field of burnt or volcanic matter, it will precisely trace the boundaries of the ancient Phrygia on the north, west, and south; following even the singular forms which it projects into Caria, Lycia, and Pamphylia. The cold, from the great elevation of the country, is so severe that no plants are to be seen, but such as are found in the Highlands of Scotland, where they suffer less from severity of climate than here. The summer is of very short duration. On descending from this elevated country, every diversity of climate is met with, till the traveller reaches the productive valleys of the rivers, and the warmer lands on the coast. During summer the heat becomes intense as the morning advances, but before noon a cold breeze descends from the mountainous country, which brings with it a refreshing coolness, accompanied by a shade of clouds, and not unfrequently by flying showers. In the early part of the evening the heat again becomes oppressive, and the dews are very heavy. To the intense cold of the winter it must be attributed, that neither the aloe nor the cactus, nor any succulent plant is to be seen in the country; the frosts of winter being too severe for them. Orange and lemon trees are with difficulty preserved in the sheltered valleys; the olive seldom flourishes, even in a similar situation; and they are all inferior in growth to those of Sicily, Calabria, and Greece. The extremes of the seasons are farther shown by the migration of the animal kingdom, which takes place to a great extent. The scenery of Lydia and Mysia is varied and beautiful, the hills being well wooded with splendid forest trees. In the forms of the mountains there is more of beauty than of grandeur; the peculiar feature is the great contrast between the hills and the valleys, the latter being so level as to appear to have been formed by lakes. In Bithynia the scenery is of a bolder character, its fine mountain range of Olympus, giving it a resemblance to Switzerland; its valleys are also richly covered with luxuriant woods. The flat-topped hills and immense table-lands of Phrygia, which are often swampy, and seldom produce a tree, present more of the wild and the dreary, than of the picturesque. Pisidia, including the Taurus, again, partakes of the Alpine character; but the woods are not so finely grown as in Bithynia. The extreme beauty of Pamphylia is derived more from distant effects than from near views. The marble mountains, which form the distant horizon, shoot their jagged peaks of silvery rock, sometimes capped with snow, against the clear sky, while their bases are washed by the blue sea, which they enclose in their wide-stretched arms. Lydia is more mountainous, and resembles, while it far exceeds, in the boldness of its cliffs, and the richness of its vegetation, the scenery of Parnassus. Its valleys, and particularly that of the Xanthus, are of peculiar beauty. Caria abounds in scenery of the most picturesque kind, its coasts being broken into bold headlands, whose ranges, continued into the sea, rise into rocky islands. The south-east of Lydia is less beautiful, and much resembles Sicily or Calabria; but, on approaching Smyrna, this district contains valleys equal to those near Salerno or Naples.—(*Journal written during an Excursion in Asia Minor, by Charles Fellows.* London, 1838. Pp. 300-303.)

The country watered by the Euphrates and the Tigris, forming the south-eastern region of the empire, is bounded on the north by the table-land of Armenia, and the lofty ridges of Taurus; on the east by the long line of mountains (anc. *Zagrus*) which, under the names of the mountains of Kurdistan, Louristan, Bukhtiari, &c., divide it from the table-land of Iran; on the west and south-west, by Syria, and the deserts of Arabia; and on the south-east it barely touches the Persian gulf. Assyria, including Taurus, is distinguished by its structure, its configuration, and its natural productions, into three zones or districts; by structure into a district of metamorphic and plutonic rocks; a district of sedimentary formations; and a district of alluvial deposits: by configuration into a district of mountains; of stony or sandy plains, and of low watery plains: by natural productions into a country of forests and fruit-trees, of olives, wine, corn, and pasturage, or of barren rocks; a country of mulberry-trees, cotton, maize, sesame, tobacco, or of hardy labiate and composite plants, or barren clay, sand, pebbly or rocky plains; and a country of date trees, rice, and pasturage, or a land of saline plants, liquorice, reeds, sedges, and rushes. The first of these districts comprises the hilly and mountainous country commonly called Taurus, which is composed of many different chains. Taurus consists of a central nucleus of granite, gneiss, and mica schist, associated with limestones, diorites, and diallage rocks; of lateral formations of diallage rocks, serpentines, actynolite rocks, steaschists, slate-clays, and outlying sandstones and limestones. The mean elevation of the crest of the Taurus varies in different places from about 2900 feet to 5650. To the south of the main chain lies the plain of Diyarbekr, 2500 feet above the level of the sea, and separated from the mountainous district of Arghana by ranges of indurated chalk. The climate of Taurus presents cold winters with much snow, and hot summers. In some of the valleys the natives themselves complain of the excessive summer heats. The influence of warm days and cold frosty nights in spring, is to forward vegetation and yet preserve the snow. In March, the almond tree, pear, medlar, and laburnum are in blossom in the valleys. The most remarkable feature, however, is the abundance of trees, shrubs, and plants, in the northern, and their comparative scantiness in the southern districts. Among the useful and cultivated plants may be mentioned the vine, fig-tree, almond, olive, wheat, triticum spelta, hordeum hexastichon, and h. distichon. Gall nuts, pears, apples, and apricots, are abundant. The roots of astragalus christianus are eaten; the rhus coturnus is used for dying skins red; and the rhamnus catharticus and valantia articulata for dying yellow. The second district, comprising the plains of *Syria, Mesopotamia*, and *the Country to the east of the Tigris*, to the mountains of Kurdistan, consists of cretaceous and supracretaceous deposits, here and there interrupted by plutonic rocks, of the feldspatho-pyroxenic family. The character of the plains varies with the elevation and latitude, as well as with the quality of the soil, and from the presence or absence of moisture. The upland of feldspatho-pyroxenic rocks, which extends from Jezirah to Tel Sakhan near Nisibin, and which has a mean elevation of 1550 feet, is a stony wilderness, amidst which there is little or no cultivation, and where, nevertheless, numerous flocks of sheep and herds of cattle obtain a scanty subsistence during a great part of the year. The great plains of northern Syria, with a mean elevation of 1300 feet, of Northern Mesopotamia, from Urfa to Rakkah, and from Nisibin to El Hathar, and the Chaldæan plain, east of Nineveh, that of Arbil and of Altun-Kupri, present characters pretty nearly similar, an almost uniform level, with a soil possessing good agricultural qualities, but barren from want of irrigation. The exceptions to this are where the plains are intersected by hills, or in spots at the heads or on the banks of rivers or rivulets, where they can be irrigated, and which, in consequence, become the permanent residence of agricultural tribes, the seat of cultivation and prosperity, or the temporary resort of nomadic Arabs and Turcomans. Fertile districts of this kind are abundant; the plains of Urfah and Harran are watered by numerous streams. The climate is characterized by great dryness, combined with very great variations of temperature; Fahrenheit's thermometer has been observed at 115° in the shade, in the month of August, while, in winter, it has fallen as low as

12°. From the Mediterranean Sea to the Tigris, there is an increase of cold in the same parallels from west to east; which is not the case, however, in the plains east of the Tigris, which, being sheltered by the mountains of Kurdistan, have a more temperate winter. The influence of Taurus, which is clad for so many months with snow, is considerable in reducing the winter temperature; and on the plains of northern Syria and Mesopotamia, from the want of sheltering hills, causes the vegetation to be really less southern than that of Sicily and Andalusia. At the same time, the long extent of littoral mountains, Amanus, Cassius, and Lebanon, adds to these unfavourable circumstances, by impeding the passage of mild breezes from the Mediterranean Sea. Notwithstanding these circumstances, the direct heat of the sun, increased by radiation and the equality of level, is almost without a moderating influence; for evaporation is nearly null, and hence, where the winter temperature is so low, the summer heats are intense. It is on this account that there are few annual and tender plants, while the woody and tough stems of vivacious species, resist better such opposite influences. For two months in the year, October and November, vegetation is dormant, everything is burnt up, and no new forms appear; but, after this period, clouds from Lebanon, and changes of temperature on the mountains to the north and the east bring down, over Mesopotamia and Adiabene, moderate but refreshing rain. The brown and fallow colour of the ground changes, grasses begin to increase and spread, and notwithstanding the subsequent frosts and storms, some compositæ bud, without flowering; but the succession of vegetation is kept up by those families which have succulent roots, nodes, or bulbs, which preserve moisture, so as to maintain life even in the dryest soil. Sleeping during the summer heats, they awake to activity with the first rains, and some send forth prematurely their leaves and even buds in October. They are soon, however covered with snow, and blasted by the wintry winds; till early in spring, when the same precocious plants make their appearance with all that vivid beauty of colour and variety of form, which have lent to the poet and the painter their not always fabulous pictures of the East. The absence of trees on these great plains is a phenomenon difficult to account for. The vegetation is ephemeral, or consists of succulent and herbaceous biennials. Willows, however, grow on the banks of the Euphrates; and the oriental plane, near springs and tombs, rises to an enormous size. The desert described by Xenophon, extending from the Khabour to Rehoboth, still preserves the features of his day, "full of wormwood; and if any other kinds of plants grow there, they have for the most part an aromatic smell." Wild asses or horses are still met with; but ostriches are rare.

The alluvial plains of Babylonia, Chaldæa, and Susiana, which form the third district, have their northern limit a few miles above Felujah; on the west they are bounded by a line of rock and sand not far from the Euphrates; and on the east, by the Hamrun hills, a long range composed of tertiary sandstones, with salt, gypsum, and limestones, which crosses the Tigris above the 35° N. lat. The plain, in the north-western or upper portion, has a slight but well-defined southerly inclination, with local sinkings above Felujah, undulates in the central districts, and then subsides into mere marshes and lakes. The soil of the northern part is pebbly, and this is succeeded lower down by a continuous formation of clayey soil covered with mould, dust, or sand, or the more tenacious clay of frequent inundations. The modern accumulations are still very great. Numerous canals, extending from the one river to the other, at certain seasons inundate the whole country, and leave permanent marshes in some places. But the natural level is everywhere altered by artificial works, as mounds, walls, mud-ramparts, and dykes; elevated masses of friable pottery are succeeded by low plains inundated during a great part of the year, and the old beds of canals are visible in every direction. There is still some cultivation and some irrigation; flocks pasture in meadows of coarse grass; and the dusky encampments of the Arabs are occasionally met with; but, except on the banks of the Euphrates, there are few remains of the date-groves, vineyards, and gardens, which adorned the country in the days of Xenophon; and still less of the labour and population which must have made a garden of such a soil in ancient times. Babylonia, strictly so called, extends only to the marshes of Lemlun, (32° N. lat.), the soil of which consists for the most part of a soft alluvial clay and mud, containing only river and lacustrine shells. The greater part of the basin, which stretches forty miles along the Euphrates, and extends many miles on each side, is occupied by water or vegetation, where large herds of buffaloes feed; and in some places, during summer, the mud is covered with luxuriant crops of rice. Below Lemlun, there is little indication of change; a gradual elevation of soil, so gentle as to be scarcely perceptible, but affording ground fit for cultivation in the dry months, leads to plains of wide extent, only a few feet higher than the marshes, which form the ancient territory of Chaldæa. The vegetation is characterized by saline plants, the river banks are fringed with shrubberies of tamarisk and acacia, and occasionally with groves of poplar. Below Suk-el-Sheikh the country is occupied by an almost perpetual inundation, and at Omu-el-bak (mother of musquitoes), the waters spread out like a great lake, extending to the verge of the horizon, and are only here and there interrupted with groves of date trees and huts. To the south of these great inundations, as far as the confluence of the Euphrates and Tigris, the land is covered by an aquatic vegetation, chiefly by a kind of agrostis, which, like the cane-brake of North America, has the appearance of the true reed of northern Europe. These tracts present every where great uniformity of feature, a boundless growth of plants of the same kind, interrupted by lakes and ponds, or intersected by artificial canals. The character of the country below Kornah is very similar, being fringed with date-trees along the river sides, and beyond these it is inundated at one season, and forms a naked plain at the other, without a moss or a lichen to feed the piping sand-grouse; a barren and desert waste of mud and sand, covered with water for nine months in the year. The banks, however, are lined with groves of date trees, and at times afford a rich pasturage for buffaloes. Villages are numerous, but the population is scanty. (*Ainsworth's Researches in Assyria, Babylonia, Chaldæa, &c.* London, 1839.)

Kurdistan, which forms the north-eastern portion of ancient Assyria, and extends also into Persia, presents an immense succession of hill and valley, with delis and plains of exhaustless fertility, and towering mountains. The summits of the great range of Zagrus rise to upwards of 14,000 feet; their ridges are clothed with forests as far up as 6000 feet; above that height the country is less covered, though in some of the recesses there are forests even in the more elevated spots. The trees are walnut, beech, pine, oak, cedar, white and red mulberry, cherry, apple, pear, medlar, and apricot, juniper, wild plum, wild rose, wild madder, and vine. The climate is excessively cold during the greater part of the year; and the hills are covered with snow for eight months.

Taurus, in its progress westward from the Euphrates, sends forth several spurs into Syria, the principal and most westerly of which bears the names of *Alma-dagh* and *Jawur-dagh*, the ancient *Amanus* and *Pierius*, which terminate near the mouth of the Orontes, and form the boundary between Syria and Asia Minor. On the south side of the mouth of the Orontes, *Jebel el-Akral* (Bald-hill), the ancient *Casius*, rises abruptly to the height of 5318 feet, and is continued to the east by the *Jebel Chaksinah* and the hills of Antioch, as far as to the southern valley of the Orontes. To the south the hills of Antioch are continued by the *Jebel Kraad* to the *Nosairi Mountains*, which extend southwards, in connection with *Lebanon*. About 34° N. lat. the chain divides into two ranges, the eastern and the western; the former being the *Libanus*, the latter the *Anti-Libanus* of the Greeks, which enclose between them the long narrow valley of *El Bekaa*, or Hollow Syria. The western branch terminates near the sea-coast, to the southward of Sidon; while the eastern branch, in nearly the same parallel, divides again into two ridges, the one of which passes into Arabia, along the eastern side of the valley of the Jordan. The other extends southwards, along the western side of the

Jordan, forming the watershed between the basin of the Dead Sea and the valleys which send their waters to the Mediterranean, and covering the interior of Judea with a wilderness of barren mountains. *Mount Carmel* forms a bold promontory on the south-western side of the Bay of Acre, and has an extension south-eastwards till it joins the mountains of Judea. Farther south, these mountains become connected with the rocky chains which traverse the Petræan Arabia, and fill up the space between the Gulf of Suez and the Gulf of Akaba. The diverging range of the Libanus, which forms the north-eastern part of the valley of the Upper Jordan, was the *Hermon* of Scripture; and farther south were the mountains of *Gilead*. These mountain ridges form a number of valleys, the principal of which extend north and south; but besides these is a great number of transverse valleys along the sea-coast as well as in the interior. The crest and acclivities of the *Nosairi Mountains* are almost uniformly barren and destitute of forests; their outline is tame, and the general elevation of the chain hardly exceeds 1000 feet. They are steep towards the *Valley of the Orontes*, which lies between them on the west, and the *Jabel-Shaehanhou* on the north-east, and is called *El Ghab*. The valley is inhabited by a mongrel race of Arabs and Fellahs, who live, in winter, in a few villages dispersed over it, of which they cultivate only the land adjacent to their dwellings. On the approach of hot weather they retire with their flocks and herds to the eastern mountains in search of pasture, and to escape the swarms of flies and gnats which infest the Ghab at that season. Towards the west the Nosairi Mountains descend in irregular hills into the plain of Jebilee. *El Bekaa* (the Κοιλη Συρια, Koilé Suria of the Greeks, *Cale Syria* of the Latins) is a beautiful valley between the two branches of Lebanon, drained by the river Leitani. It is about 90 miles in length, by 11 of average breadth, and is the richest and the most beautiful part of Syria. The *Valley of the Jordan* extends about 175 miles from the sources of the river to the southern extremity of the Dead Sea. From the Lake of Tabariah to Ain el Arus, 12 miles south of the Dead Sea, where it meets the Wadi-el-Arabah, it is called *El Ghor*. On the east side of the valley, between the two lakes, the mountains rise almost precipitously from the river, but on the west there is a narrow strip of level ground of singular fertility. To the north of the Dead Sea the country opens into the plain of Jericho, 18 miles in length by 7 in breadth, walled in by an amphitheatre of hills, which concentrate the rays of the sun, and make it very hot and parched. It produces, nevertheless, good crops of wheat, barley, and balm. The whole valley of the Jordan is considerably below the level of the Mediterranean Sea; but the exact amount of the depression has not yet been ascertained. The *Valleys of Galilee* are generally small, but beautifully wooded; and between Galilee and the ridge of Mount Carmel lies the great *Plain of Esdraelon*, extending south-east from the Bay of Acre, and watered by the river Kishon. It is called in Scripture the Valley of Jezreel or Megiddo; and is exceedingly fertile, and well adapted for growing corn; but it is uncultivated, and only affords a rich pasture to a few scattered herds. The *Plain of Haouran* lies to the south of Damascus, between Hermon and Gilead, and the Jebel Haouran. It is famous for its wheat, and contains many scattered hummocks, which are the sites of villages. All these hummocks, the round stones found in the fields, and the whole mountain of Haouran, consist of black basalt. The houses are entirely built of this stone, even to the doors, and present rather a sombre appearance. The plain is inhabited by Turks, Druses, and Arabs, and is also visited in spring and summer by Bedwins. The rocky wilderness called *El Ludja* and the *Jebel Haouran* comprehend all the uneven country which extends along the eastern side of the plain of Haouran, from near Damascus to Bosrra, and is supposed to be the ancient *Trachonitis*. The plain of Haouran itself is the ancient *Auranitis*.

The great Syrian desert and its borders are not a bare wide waste of sand. Its surface consists generally of a fine black soil, covered in winter with a long lank grass and herbs, and peopled with antelopes, wild asses, and boars. In summer, however, the grass and the herbs are burnt up, and the inhabitants are then obliged to betake themselves to the borders of the cultivated country. In the interior, indeed, sandy tracts are met with, but even there a scanty herbage is to be found. Along the side of Syria are numerous ranges of hills which divide the country into small plains; but eastward from Palmyra, the desert presents a boundless level surface as far as the eye can reach. In summer the soil is parched and cracked into innumerable fissures by the heat, and the vegetation is destroyed; but no sooner do the winter rains commence than the herbage shoots up with astonishing luxuriance. In summer, the herds and flocks feed on the dry dead herbage, and are obliged to congregate near pools and wells; but in winter the Bedwins spread over the desert, and make long journeys, their flocks and herds no longer requiring water, as the plants then become juicy and full of sap. After the heavy rains, a species of vegetables somewhat like mushrooms springs up in immense quantities in different parts of the desert, some of which are celebrated for their abundant produce of this article. The Bedwins gather and eat them, after boiling them with butter-milk or melted butter; when they are esteemed a great delicacy. The Arabs of the desert belong to the great Aeneze tribe, and, during the former Turkish dominion of Syria, were quite independent; but under the Egyptian rule they were obliged to acknowledge the supremacy of the Pasha, and even to pay him tribute.

Syria has three distinct climates. The tops of Lebanon, which are for the most part covered with snow, diffuse a coolness over the interior, while the lowland sea-coasts are subjected to heat and moisture, and the eastern lowland adjoining Arabia are exposed to a dry and scorching heat. The seasons and the productions consequently vary. In the mountains the winter lasts from November to March, and is sharp and rigorous; no year passes without falls of snow, which often cover the ground, for months together, to the depth of several feet. The spring and autumn are agreeable, and the summer is not oppressive. In the plains, however, as soon as the sun has passed to the north of the equator, a sudden change takes place to overpowering heat, which continues till October; but to compensate this, the winter is so temperate, that orange-trees, dates, bananas, and other delicate fruits grow in the open field. A few hours are sufficient to produce the change from spring to winter. If natural advantages were duly seconded by art, we might, in a space of 50 miles, bring together, in Syria, the vegetable treasures of the most distant countries. Besides wheat, rye, barley, beans, and cotton, which are cultivated every where, there are several objects of utility or pleasure peculiar to different places. Palestine abounds in sesamum which affords oil, and in dhourra resembling that of Egypt. Maize thrives in the light soil of Baalbec, and rice is cultivated with success along the marshy borders of lake Houle. Sugar-canes have been introduced at Beyrout and Saide; indigo grows without culture on the banks of the Jordan, and only needs a little care to make it of good quality. The hills of Latakia, and indeed all the mountains, produce tobacco. Olives grow at Antakia and Ramli to the height of the oak. The white mulberry thrives admirably on Lebanon and along the coast, and forms the wealth of the Druses, in consequence of the beautiful silk produced by its worms; and the vine raised on poles, or creeping on the ground, furnishes red and white wines equal to those of Bourdeaux. The clusters are remarkably large, and the grapes are often of the size of plums. Jaffa boasts of her lemons, Gama of dates and pomegranates, Tripoli of oranges, and Beyrout of figs. Aleppo is unequalled for pistachio nuts; and Damascus possesses every kind of European fruit; apples, plums, and peaches grow with equal facility on her rocky soil. Niebuhr was of opinion that the Arabian coffee shrub might be cultivated in Palestine. The mountains which diverge from Taurus in northern Syria are richly wooded; and large supplies of oak and yellow pine have recently been drawn from them for the use of the Egyptian navy. Cotton is also produced in considerable quantity in the same region, but, being raised from an annual plant, the crop is exposed to great vicissitudes. Syria possesses all kinds of domestic animals common in Europe, with the buffalo and the camel besides. The gazelles take the place of our deer; and instead of wolves there are jackals, hyænas, and ounces. But the ravages

of none of these animals are so mischievous as those of the locust. Unusually mild winters generate this insect in swarms in the Arabian deserts, from which, in bodies like clouds which darken the sky, it descends on the plains of Syria, consuming in its progress every particle of vegetation. The approach of these formidable swarms spreads general terror, and their visits are followed by certain famine. The only hope of the Syrian under this calamity is in a bird called *samarmar*, which devours the locusts, and in the south-east winds, which drive them into the Mediterranean. In the summer of 1836 an invasion of this insect took place, threatening destruction to every thing green in the province. To destroy them ere they could take the wing was the only chance, and Ibrahim Pasha, it is said, set not only all his army to pursue them, but every village was called upon to send out parties against the common enemy. There is, however, a species of locust which furnishes a tolerable article of food for man.

Samaria is a hilly country, with intervening valleys, which produce abundance of wheat, silk, and olives.

Judæa lies farther south, occupying the most southern part of Syria, between the Mediterranean and the Dead Sea. The ground rises from Jaffa towards the mountains of Judea, in four terraces. The sea-shore is lined with mastic trees, palms, and prickly pears; higher up are vines, olives, sycamores, and lemon trees, with groves of evergreen oaks, cypresses, and acacias, and turpentine trees. The ground is covered with rosmary, citisus, and hyacinths. Some remains are still to be found of the walls which the ancient inhabitants built to support the soil on the slopes of the hills; of the cisterns in which they collected rain water, and of the canals by which these waters were distributed over the fields. These labours necessarily produced a prodigious fertility under a burning sun, where a little water was the only requisite to keep the vegetable world alive. The flocks of the Arabs still find in it nutritious pasturage, and the wild bees hoard up in the holes of the rocks a fragrant honey, which is sometimes seen running down their faces. But the central hills of Judæa and the country to the eastward are of a very different character, being dry and barren, and ending at last, along the Dead Sea, in a dreary desert, a wilderness of mountains, where both ancients and moderns tell us they have found nothing but stones, salt, sand, ashes, and a few thorny shrubs.

GULFS, BAYS, STRAITS.—In the Black Sea, the *Gulfs of Samsoun* and *Sinub* or *Sinope*; in the Sea of Marmora, the *Gulfs of Ismid* and *Moudania*; in the Archipelago, the Gulfs of *Besike* or *Besika*, near the entrance of the Dardanelles, *Adramyti*, *Sandarli*, *Smyrna*, *Vourla*, *Scala-nova*, *Asyn-kalesi*, *Cos*, *Symi*; in the Mediterranean, the Gulfs of *Marmorici*, *Macri*, *Satalia* or *Adalia*, *Iskenderoon* or *Scanderoon*, and the *Bay of Acre*.

CAPES — *Batoum*, *Foudji*, *Kourehlih*, *Zephira*, *Aio-Vasili*, *Poslepei*, *Vona*, *Jasoun*, *Thermeh*, *Tcherchenbeh*, *Indjeh*, *Kerempe* (ancient *Carambis*), *Baba*, *Kirpeh*, and *Kara Bournou*, all on the north coast of Asia Minor. *Cape Janisary*, at the entrance of the Dardanelles; *Paba Burun*, *Kara Burun*, and *Krio*, on the west coast; *Khelidonia*, *Anamour*, *Karadash*, on the south coast of the peninsula; *Khynzir*, *Kosyt*, *Ra-el Shakaa*, *Mount Carmel*, on the coast of Syria.

ISLANDS. — *Cyprus* (*Kupros* of the ancient Greeks, *Kybris* or *Kibris* of the moderns), situate towards the north-east corner of the Mediterranean, and one of the largest and most fertile islands in that sea: length, 140 miles; breadth, 63; superficial area, 3600 square miles. Formerly very flourishing, rich, and populous, it is now almost deserted, and full of ruined towns; but is still famed for excellent wine, cotton, and other products. It possesses great fertility, oranges, olives, raisins, figs, vines, and cotton, thrive amazingly, not excepting even the sugar-cane. The population is supposed to amount to about 60,000, of whom two-thirds are Greeks. *Towns.*— *Nicosia* (*Lefkosia* of the Turks), in the centre of the island, is situate in a fine plain, bounded by lofty mountains; population, about 4000 families. *Larnaka*, on the south coast, is the chief seat of commerce, and the residence of the European consuls. The ancient harbour is choked up; but the roadstead is good, and considerable traffic is carried on with Malta, Egypt, and Smyrna. *Famagosta* (the ancient *Arsinoe*, afterwards *Ammokhostos*), the capital of the island when in possession of the Venetians, stands on the east coast, and still exhibits many proofs of its former grandeur. *Paffo* (anc. *Paphos*), on the south-west coast, is now a mere village, but contained in former times the temples and groves of Aphrodité-Kupris (the Cyprian Venus), the goddess of love and beauty. *Rhodes* (Rhodes), near the south-west coast of Asia Minor, 46 miles by 12, and containing 460 square miles, enjoys a delightful climate, the heats of summer being cooled by the lofty hills which occupy its centre. Rhodes was renowned in ancient times for the great wealth and civilization of its people, and for the wisdom of its laws, to which it owed its long independence. It acquired a new distinction in the middle ages, when it became the residence of the knights of St. John of Jerusalem. It is now almost deserted, but is still of some importance from the fortifications and ship-building yards of its chief town, in the north-east of the island, which bears the same name, and which appears to occupy very nearly the site of the ancient Rhodus, one of the most flourishing, commercial, and splendid of the Greek cities. The Rhodians were celebrated for their navigation, and for the enterprising spirit which led them to send colonies to many parts of the then known world: they possessed for some time the dominion of the sea, and their maritime laws form the basis of the modern maritime code of Europe. The city presents no traces of its former splendour; its only public buildings are two Gothic castles, and some massy Gothic churches, now converted into mosques. It contains a population of about 5000 Turks and 1000 Jews; but no Christian is allowed to reside within the walls. The rest of the island, however, is occupied almost entirely by Greeks, to the number of about 14,000. *Samos*, 50 miles south of Smyrna, and separated by a channel, only about a quarter of mile wide, from the promontory of *Mycale*, is about 60 miles in circuit, and was famous for the worship and temple of Juno, who was said to have been born in the island. It is very fertile, rises abruptly from the sea to a great elevation, and its people were long famed for their industry; but they suffered very severely in the late war of independence, and the island is now mostly deserted and desolate. *Scio* (ancient Greek *Chios*, modern *Khio*), a beautiful and fertile island west of Smyrna, celebrated among the ancients for its wine (the *Chian*), and in latter times for its college, rich library, printing press, and numerous and industrious population, is now deserted, and covered with ruins. It was invaded by a host of Turks in 1822, the whole Greek population murdered or carried into slavery, and their property plundered or destroyed. Some barren islets or large rocks, named *Spalmadoré*, so occupy the space between Scio and the mainland as to render the passage very dangerous in stormy weather. *Mytilini* (*Lesbos*), north-west of the Gulf of Smyrna, contains 435 square miles, with a population of 40,000, who are principally maintained by their trade in oil. It is also celebrated for oysters. *Taushan* and *Tenedos*, small rocky islands near the entrance of the Dardanelles. The latter produces a wine more esteemed than any other in the Archipelago. *Marmora*, famous for its marble quarries, *Kalolimno*, *Rabi*, and the *Prince's Islands*, in the Sea of Marmora. *Kos* (*Istankhio* of the Turks), *Astropalaia*, *Nisyro*, *Piscopi*, *Symi*, *Khalkhi*, *St. John*, *Eskriti*, *Plaka*, *Adelphi*, *Staxida*, *Cazo*, *Scarpanto*, *Kalimno*, *Lerita*, *Zinari*, *Lero*, *Patmo*, *Gaitharo*, *Furni*, *Nikaria*, all off the south-west coast. *Grambousa* and *Khelidonia Isles*, off Cape Khelidonia, *Provençal*, south-west of Selefkeh. *Kefkem*, a small Island to the east of Cape *Kirpee*, in the Black Sea.

RIVERS.—The *Joruhh* rises in Armenia, and flows into the Black Sea at Batum. The *Jekil-Irmak* (green river), rises to the south-west of Tokat, flows through the eyalet of Sivas, passes Tokat, where

it is called Tokat-Su, Amasia, and Charsambah, below which it falls into the Black Sea. The *Kizil-Irmak* (red river), formed of two branches, the one rising on the frontiers of Sivas, the other in the Hassan-dagh, flows first west, then north, and falls into the Black Sea, between Sinub and Samsoun, after a course of 570 miles. It is the ancient *Halys*, and the largest river of Asia Minor. The *Sakaria (Sangarius)* is formed of two branches, one from the neighbourhood of Angora, and the other from the Emir-dagh, joined by the *Purak* from Kutaya, and has a course of 250 miles into the Black Sea.

The *Kodus* or *Surabat (Hermus)*, rises in Murad-tagh, and falls into the Gulf of Smyrna, after a course of 190 miles. The *Mendere* or *Meinder (Maeander)*, has a western course of 160 miles into the Archipelago south of Samos. It is celebrated for its windings, from which all similar windings on rivers have been called meanders.

The *Sihoon* rises near Bostan, and flows south-west past Adana into the Mediterranean. The *Jihoon* has a nearly parallel course, a little to the eastward, and falls into the Gulf of Scanderoon.

The *Aazi* or *El-Asi* (the rebel), the ancient *Orontes*, rises on the east side of Anti-Libanus, north of Damascus, flows north and north-west through a long valley to Antakia, where it turns south and south-west, and falls into the Mediterranean after a course of 225 miles. It is a rapid and troubled river, flowing near the foot of the An-arian mountains, where it forms numerous marshes. To the north-east of Antakia the streams which descend from the valley of Taurus form a large lake, *Aggi* or *Ozjo-denghi* (White sea), which empties itself by one stream, called the *Kara-su*, into the Orontes. The *Leitani (Leontes)* rises at the northern end of the valley El Bekaa, and flows south by west into the Mediterranean, a little to the north of Tyre. The *Jordan*, *Orden* or *Sheryn*, rises in a small lake, called anciently *Phiala*, in Mount Hermon, flows south into lake *Hoolya* (the *Waters of Merom*), and passes onward through the lake of *Tabariah (Sea of Galilee)*, and then flows with a winding course through a spacious valley called El Ghor, and falls into the Dead Sea. In the higher part of its course, the Jordan, after it leaves lake Tabariah, flows between banks which are often picturesque; and in spring it fills its deep channel, moving along with great rapidity. The *Zerka (Jabbok)* flows from Jebel Haouran westward into the Jordan, nearly midway between the two lakes. The *Mandhour* flows also from Jebel Haouran to the Jordan, a few miles south of lake Tabariah. The *Kison* flows through the plain of Esdraelon into the south side of the bay of Acre. The *Kefr, Zerka, Kasab, Arsouf, Petra, Roubin, Sorek, Besor* or river of Gaza, all flow into the Mediterranean Sea.

The EUPHRATES is formed by the union of two large streams in Armenia. The *Murad* or southern, generally called the eastern branch, rises not far from Bayazid, in the mountains named Ak-dagh, flows first northerly, and then west and by south, about 300 miles, collecting in its progress the numerous streams which pour down from the mountains on both sides of the long narrow valley through which it flows. The northern or western branch rises about 20 miles to the N.E. of Erzroum, and passes westward within a few miles of that city, under the name of the *Frat* or *Kara-su*. It then flows west by south through a succession of long narrow defiles, till it meet the Murad, about 7 miles above the lead-mines of Keban-maden. The united stream flows on in the direction of the Kara-su, and then makes a long circuit through the Taurus under the parallel of 38° N. lat. After clearing the mountains, the river forms a double cataract, 22 miles above Samosat, and flows for 100 miles in a direction a little to the south of west; then proceeds for another 100 miles nearly south, till it reaches the latitude of Haleb, when it turns to the south-east, and continues in that general direction to the head of the Persian Gulf; the whole length of its course being variously estimated between 1500 and 1700 miles. The general description of the Euphrates, for some distance below Bir, is that of a river of the first order, struggling through high hills, in an exceedingly winding course, as it endeavours to force its way over a rocky bed, from one natural barrier to another, the velocity of its current varying from rather more than two miles to four and a half per hour, according to the season and the nature of its bed. It is in this part of its course that it makes its nearest approach to the Mediterranean Sea, at the gulf of Scanderoon; the shortest straight line between them being about 100 miles, and the bed of the river at Bir being 628 feet above the level of the sea. Although the stream is in many parts quite uninterrupted by cataracts, it is frequently obstructed above Annah, and a little below that place, by a rocky bottom, and is shallow enough in some places for camels to pass in the autumn without burdens, the water rising to their bellies, or being four feet deep. The Euphrates is here enclosed between two parallel ranges of hills, and its banks are for the most part thickly covered with high brushwood, and timber of moderate size; the "eternal tamarisk," as the members of the late expedition call it, accompanying the river throughout its whole course. A succession of long narrow islands, either wooded or cultivated, is found in many parts, and on some of these are small towns; the borders of this ancient stream being still well inhabited, not only by Bedwins but by permanent residents. Fifty or sixty miles below Hillah the river enters a low tract, called the *Marshes of Lemlun*, where the navigable channel is very narrow, winding, and intricate. These marshes extend about 25 miles in a straight line, but 50 by the channel of the river, which here divides into innumerable small canals, leaving the main channel about 120 feet in breadth, and in some places not more than 45. From the marshes downwards there is a fine broad stream, for 190 miles, to Kornah, where the Euphrates and the Tigris meet, 1100 miles below Bir, by the course of the river. From Bir to the sea, the average inclination of the channel is 6.354 inches a mile; but this is much affected by rapids, as at Annah. Through all that distance it is everywhere navigable by boats of a particular construction, which draw little water. Though rudely built, they are numerous, and carry on much of the internal traffic of the country. Some years ago public attention in Britain having been directed to the Euphrates as a channel of communication with India, it was minutely surveyed by Captain Chesney, whose report being favourable, an expedition was sent out under his command, to try its practicability. Two iron steam-boats were built at Bir, and after many delays and dangers, the descent of the river was accomplished, but the disadvantages of the route have in consequence been found to be too numerous and too serious to be easily obviated, and all that has been gained by the attempt is the addition it has made to the knowledge of the geographer and the naturalist; though, as usual in such cases, there are people who still maintain the practicability of the route.

The TIGRIS, the companion and the rival of the Euphrates, has its principal source in the mountains of the country of Zoph, in Armenia, about 5000 feet above the level of the sea. A rising ground prevents it from proceeding to the Euphrates, while a deep ravine opens a passage for it towards Diyarbekr, whence it pursues its rapid course through a rugged territory with a great declivity, collecting the waters from the south side of the same range of mountains which send their northern streams to the Murad. Its extreme rapidity, in this part of its course, the natural effect of local circumstances, has procured for it the name of *Tigr* in the Median tongue, *Diglito* in Arabic, and *Hiddekel* in Hebrew, all of which denote *the flight of an arrow*. As the Tigris and the Euphrates approach each other, the intermediate land loses its elevation, and is occupied by meadows, marshes, and deserts. Above Baghdad, the rivers are only about 20 miles apart, but they afterwards separate to a distance of 110 miles, and finally meet at Kornah, about 134 miles from the sea. The Tigris is, generally speaking, a rapid river, and in this respect it has been contrasted with the Euphrates, which has been called a gently flowing stream. But this comparison will apply to the rivers only in the upper parts of their course; for lower down, they both flow onward for several hundred miles through the same plain, with more or less rapidity, according to circumstances. Below Baghdad the Tigris has a moderate current; but in its course from Mosul to that city, it passes over several ledges of rock; and

above the 32° N. lat., rushes through the hills of Hamrûn, where it has cut a channel only 150 yards wide. The rapidity of the stream of the Euphrates varies at different places; in the depression of the plain, it is often not a mile an hour; but over the dry ground it runs nearly three miles an hour; the upper Euphrates averages from three to four. The Tigris, in the plains, flows often less than one mile an hour, and averages one and a half throughout. At Mosul, in the time of flood, it averages not more than four miles an hour. *(Ainsworth's Researches, &c.)* Captain Mignan was much struck with the force and rapidity of the Euphrates at Hillah, from his having always heard it asserted that the Tigris flowed more swiftly. "At this point," he says, "the attribute (sluggish) is inapplicable; for at the time I am writing the stream is pursuing its course at the rate of three knots and a half an hour, whilst the Tigris flows at scarcely three. From the house in which I lodged (about two furlongs from the bridge of Hillah), I could distinctly hear the rushing of the water beneath the bridge, whereas it is never audible at Baghdad, not even to those who live on the brink, and opposite the floating bridge. Hence I conceive that the epithet 'sluggish,' when applied to the majestic Euphrates, is improper. In May 1828, I again crossed these rivers, and ascertained their respective velocity. The Euphrates flowed past Hillah at seven knots an hour, and the Tigris at five knots and a half," (at Baghdad we presume he means). — *Travels*, pp. 121—122. There has also been considerable discrepancy in the opinions of travellers, respecting the relative size of these rivers. The Euphrates has certainly the longest course, but it is more weakened by the supplies drawn off for irrigation; and at Hillah its width is only 420 feet, while that of the Tigris at Baghdad is more than 600. Both rivers overflow their banks in spring, when the snow melts on the mountains of Armenia; the Euphrates rises to the perpendicular height of 12 feet, the Tigris about 20 at Baghdad; and, when the fall of snow has been very great during the preceding winter, the country between and beyond the two rivers, in the lower part of their courses, becomes a vast lake,

The Tigris, during the whole year, contains a sufficient body of water for moderate-sized boats heavily laden, up to Baghdad; and, during the greater part of the year, as high as Mosul and Diyarbekr. The great and only difficulty navigators have to contend with, arises from the savage character of the people on its banks, who plunder every stranger that falls into their power, and not unfrequently murder them.

The only affluent of the Euphrates worthy of notice is the Khabour, a large stream which joins it at Kirkesiah from the north-east. The principal affluents of the Tigris are the *Great Zab*, the *Little Zab*, the *Toak*, the *Odorneh*, and the *Diyalah*, from Kurdistan; and the *Mendeli*, from the south-western declivities of the mountains of Louristan. The two great rivers are, however, connected by several canals, the principal of which is the *Shat-el-Hie* or *Hye*, which extends 160 miles from the Tigris at Kut Aamarah, 241 miles above Kornah, almost due south to the Euphrates, 90 miles above Kornah. It is dry in summer, but in winter it is about two fathoms deep, and was recently passed by a steam-vessel. Both rivers seem to have frequently changed their course through the alluvial plains.

The united stream of the Euphrates and Tigris is called the *Shat-el-Arab* (River of the Arabs), and flows with a somewhat winding course, in a direction nearly south-east from Kornah; entering the sea by a single channel called the *Khorè-el-Bussrah*, over an extensive bar, which has only a depth of three fathoms at high-water, and a bottom of soft oozy mud. It is described as being everywhere broader than the Nile, and its waters much deeper, while the banks are more thickly covered with groves of date trees, and more on a level with the surface of the water, so as to be more easily irrigated than any part of Egypt, except during the inundation; but in other respects there is a striking contrast between these classic and noble rivers. Ships which can pass the bar may be easily navigated up to Bussrah. The tide ascends the Euphrates 60 miles, and the Tigris 35 miles above Kornah. Not far below Kornah the Shat-el-Arab is joined by the *Haweeza* or *Kerkah*, a large river from Louristan; and below Bussrah it communicates, by the *Hafar* canal, with the *Karoon* or *Kûran*, and as was supposed till Chesney's expedition proved the contrary, by the *Jerahi* also: the three rivers together forming seven mouths. The four eastern mouths belong to the Karoon and the Jerahi; the fifth, named *Khoré-omeyah*, leads directly into the Shat-el-Arab, and is believed to be navigable by ships drawing 10 feet water; but being so close to the main body of the river, its passage is never attempted. The *Khoré-el-Bussrah*, the principal entrance into the river, and the only stream now navigated by ships, has been already described; and the seventh, *Khore-Abdallah*, is supposed to have been once a mouth of the Euphrates, when that river reached the sea by a channel of its own, before it was united with the Tigris at Kornah. At present it is rather a creek or inlet of the sea, than the mouth of a river. It is said to be four times as broad from land to land at its entrance as the Shat-el-Arab is at the same point, and it continues to be twice as broad throughout its whole length; the depth of water in mid-channel, decreasing from ten fathoms at the entrance to five fathoms at the head.

LAKES.—The great LAKE OF VAN, in Armenia, situate between 38° and 39° N. lat., and 42° and 44° E. long., extends nearly 80 miles in length from S.W. to N.E.; the eastern half has only a breadth of from 5 to 9 or 10 miles; in the middle it suddenly expands to a width of 37 miles, but contracts again at the west end to 15 or 16. It occupies the bottom of a valley, or, as M. Dubois calls it, a volcanic amphitheatre, surrounded with lofty mountains; its waters are bitter, except at the mouths of the rivers, where they are sweet enough to be drunk by cattle. A species of herring or sardinia is taken in abundance at some seasons, and is salted, and exported to all parts of Asia Minor. The beauty of this lake has been celebrated by almost every Armenian writer both in prose and verse. It contains two considerable islands, with Armenian convents, one of which bears the name of *Akhtamar*, which is also the Armenian name of the lake. The Turks call it *Arjish*. A few small vessels ply upon the lake; and a singular substance is found floating on its surface, which the people gather, and use in washing clothes. This is an alkaline salt, composed chiefly of carbonate of soda and chloride of sodium or sea salt.—(*Southgate*, II. 306.) The lake is 5,467 feet above the level of the sea.

The great *Tuzla*, or *Salt Lake of Koch-Hisar*, situate nearly in the centre of Asia Minor, is said to be 30 leagues in circumference; it is narrow, while its length extends nearly 50 miles. The water is so extremely salt that no fish or other aquatic animal can live in it; even birds are afraid to touch it, as their wings become instantly stiff with a thick coat of salt; and anything thrown into the lake is soon covered with that substance. The remains of a causeway formed across the lake are almost concealed under a case of salt, and the bed of the lake at some places consists of a thick crust of solid salt. The salt is a government monopoly, and is collected at only four places.—(*Hamilton, Journal R. Geog. Soc. Lond.* VIII. 147.) The surface of the lake is 2,500 feet above the level of the sea. It is called by the people in the neighbourhood *Tuz-choli* (salt desert), because it is nearly dry in summer; but sometimes *Tuz-goli* (salt lake), *Agi-gol* (bitter lake), or Kock-hisar-goli (lake of Kerk-hisar.)—*Ainsworth's Journal, R. Geog. Soc.* X. 298.

The DEAD SEA, called by the Arabs *Bahr Lout* (Lot's sea), and *Bahr Mutneh* (stinking sea), and by the Latin geographers, *Lacus Asphaltites* or *Mare Mortuum*, is situate in the southern part of Palestine, between 31° and 32° N. lat. and 35° and 36° E. long. Its dimensions have not yet been exactly ascertained; but it probably extends about 50 miles in length from N. to S., and from 7 to 20 in breadth. In July 1835 Mr. Costigan, an Irishman, with a Maltese sailor as his servant, spent eight days in making the tour of this lake in a boat, but was so worn out with his exertions, that he died before he could

give an account of his voyage. His servant, however, had observed the coast and soundings with the eye of a sailor, and told Mr. Stephens, who found him at Beyrout, that they had moved in a zigzag direction, crossing the lake several times; that every day they sounded frequently with a line of 175 brachias each about 6 feet; that they found the bottom rocky and of very unequal depth, sometimes ranging 30, 40, 80, 20 brachia, all within a few boat's length; that sometimes the lead brought up sand, like that of the neighbouring mountains; that they failed but once to find the bottom, and in that place there were large bubbles all around for 20 paces, rising probably from a spring; that, in one place, they found on the bank a hot sulphureous spring; that in four different places they found ruins, and could clearly distinguish large hewn stones, which seemed to have been used for buildings; that at the south end of the lake a long tongue of high land projects into the water, and is composed of solid salt, which has at a distance the appearance of an island, the extremity being higher than the isthmus. In March 1837 it was again surveyed in a boat by Messrs. Moore and Beke, who found its depth in some places to exceed 300 fathoms; and, from several observations on the temperature of boiling water, and by the barometer, they estimated the level of its surface to be 500 feet below that of the ocean. Professor Schubert has estimated the depression, as indicated by the barometer, to be 568 or 600 feet; but M. Russegger has carried his estimate, also by barometer, to the enormous amount of 1060 feet. Its waters are intensely salt, and their taste is of the most nauseous kind, salt, bitter, and sulphureous, and so pungent that the eyes smart severely for some time after being dipped in them. It has been found to contain, in 100 parts, 0.920 of muriate of lime; 10.246 of magnesia; 13.360 of soda, and 0.64 of sulphate of lime. The south-western side of the lake is skirted by a long low ridge about 150 feet high, the whole mass of which consists of solid rock salt, covered with layers of soft limestone, marl, and other substances, through which the salt breaks out, and appears on the sides in precipices 40 or 50 feet high, and several hundred feet long. Often also the salt is broken off in pieces which are strewed along the shore like stones, or accumulated at the foot of the precipices. The extreme saltness of the lake is thus easily accounted for; the Arabs carry salt from the Dead Sea to all parts of Palestine for common use. The principal supply of water is derived from the river Jordan, which, even two or three miles above its mouth, is impregnated with the salt and bituminous matter of the lake; but, in the rainy season a great supply is also derived from the south; for not only the waters of the valley El Arabah, but those also of the western desert, far to the south of Akaba, flow northwards to the Dead Sea. Nothing can be more dreary than the scenery round this lake; the soil is without vegetation, and furnishes food for neither bird nor beast. The water is extremely buoyant, and the air above it has a feeling of oppressive weight. Asphaltum or bituminous matter is found floating on its surface; but whether or not it contains fish seems not yet positively ascertained.—(*Stephen's Incidents of Travel.* New York, 1838, vol. II. ch. 14 and 15. *Journal R. Geog. Soc. Lond.* vol. IX.)

The *Lake of Tabariah* or *Sea of Galilee*, is situate about 70 miles N. from the Dead Sea, in a basin surrounded by lofty but naked hills, about 500 feet below the level of the Mediterranean Sea, according to Professor Von Schubert. It is about 16 miles in length by 9 in breadth, and is celebrated by all travellers for its grandeur and picturesque beauty. The water is of a greenish hue, and abounds with fish, some kinds of which are said to be found only in this lake and in the Nile: it is perfectly clear and sweet, though it receives several hot salt streams so impregnated with gases that they change the colour of the stones over which they pass. The Jordan flows through the middle of the lake with a strong and perceptible current. Long-continued storms are unknown, but the lake is occasionally subject to whirlwinds, squalls, and sudden gusts from the hollow of the mountains. There is no navigation upon it, nor even a fishing boat.

The *Aggi* or *Oeja-denghis* (White Sea) is formed by the streams which descend from the valleys of Taurus, to the north east of Antioch, and empties itself by one stream, the Kara-su, into the Orontes. It is about 10 miles long, by 4 or 5 broad, and affords a navigable passage along its west side, to Murad-pasha on the upper Kara-su, and through the lower Kara-su and the Orontes to the sea. Besides these, there are in Syria, the *Bahr-el-Margi*, or Lake of the Meadow, which is the receptacle for the streams that water the plain of Damascus. In summer it is only a pestilential marsh, but in winter it becomes a considerable lake. The *Lake of Homs*, formed by the Orontes; and the *Sea* or *Salt Lake of Gebaul*, to the south-east of Aleppo. In Asia Minor there are a great many other lakes; the principal of which are: The *Lakes of Isnik, Abullionl*, and *Manigas*, on the south side of the Sea of Marmora; *Egredir*, a beautiful sheet of water about 30 miles in length, surrounded by lofty mountains, which are clothed with wood, and emitting at its south end a copious stream, which is said to fall into another very large lake, 35 or 40 miles in circumference, at the distance of four hours' journey; *Eber*, *Ak Shehr*, *Beg-Shehr* or *Kereli*, *Sidi-Shehr* or *Sogula*, the *Ak-Ghiaul* (White lake), *Ocharidak*, a salt lake, from which great quantities of salt are collected; all to the north of the Gulf of Adalia. *Gheuljik* (Little lake, 50 miles N.W. of Diyarbekr, between Kharput and Arghana-Maden, 12 miles long by 3 or 4 broad, and 4,453 feet above the level of the sea. The water is fresh, though usually said to be salt.—(*Ibrand, Journal R. Geog. Soc. Lond.* VI. 208.) It is also called *Gaukcheh* (Sky-blue), and by Mr. Ainsworth, *Gorjik-Goli*.

PEOPLE.—The *Osmanlee* are the dominant race, being spread over all the empire, but are most numerous in Asia Minor, which they seem to consider as their proper country. (*See Turkey in Europe.*) Besides the Osmanlee there is a great number of other *Turks*; those in Armenia, and along the eastern frontier, take that name, which completely distinguishes them from their western brethren, who spurn it. Next to the Turks in number are the *Arabs*, who form the principal part of the population of Syria, and of the south-east provinces. (*See Arabia.*) The *Montefyk* Arabs possess the country between Bussorah and Baghdad; their aggregate number is about 200,000, of whom 70,000 are fit for war. The *Annizah* and *Jerboa* are the other great Mesopotamian tribes. Among these tribes it has always been a part of the Turkish policy to foment a jealousy and maintain a balance of power, as otherwise they might, by confederating, drive them out of the country. The *Kurds* or *Koords*, the descendants of the ancient *Carduchii* or *Cardueni*, inhabit and give their name to a region to the south-east of Armenia, extending about 300 miles in length, and half as much in breadth, and presenting an endless succession of hill and valleys, dells and plains of exhaustless fertility, and towering mountains. They speak the Persian language with a mixture of Arabic and Chaldæan terms, and are mostly Mahometans; but their religion is conjoined with various superstitions, which seem to be the remains of the ancient Magian faith. About a tenth part of them are Nestorian Christians, or Chaldæans, who inhabit the wild mountainous region to the south of the lake of Van, round *Julamerk*, their chief town. But whatever be their religious profession, they are a very uncivilized and lawless race; their country from time immemorial has been the scene of turbulence, robbery, and warfare; and they have seldom, if ever, been more than nominally subject to any of the great empires which have prevailed in this part of Asia. Kurdistan is at present nominally divided between Persia and Turkey, without being really subject to either. The Kurds are divided into numerous tribes, and also into two classes, the nobles or gentry, who spend their time in idleness or warfare, and the slaves, serfs, or peasants, who perform all the agricultural labour, and who appear to be of a different race from their lawless masters. Many Kurds are found beyond the limits of Kurdistan, scattered through Armenia, Asia Minor, and Northern Syria, where they lead a wandering pastoral life, like the Turcomans, and sometimes prove very troublesome neighbours to the inhabitants of the plains. Everywhere the name

of *Kurd* seems to be considered as nearly synonymous with robber. The *Turcomans* are, like the Osmanlee, a branch of the great Türkee family; but, like the Kurds, they lead a pastoral and unsettled life; they are, however, by far the most numerous and most civilized of the nomadic tribes of Asia Minor. They live in tents during summer, but have generally fixed villages for their winter quarters; they possess large herds of camels, buffaloes, goats, and sheep; they also breed horses, and sell them, with milk, butter, and meat, in the towns and villages, taking in return, arms, clothes, and money. Their women spin wool and make carpets. Each camp is under a chief, whose power is regulated by customs and circumstances, the abuse of which is restrained by public opinion. They pay so much a tent to the pashas for the privilege of pasturing over the unenclosed and uncultivated parts of the provinces. A large portion, also, of the Moslem population between Baghdad and Mosul, call themselves Turcomans, and speak the Turkish language. The *Yorukhs* are another nomadic people of Asia Minor, who live in tents all the year round, but almost exclusively in the mountains; and, when in the neighbourhood of towns, they generally act as charcoal burners, and supply the townspeople with that article. They also cultivate a little ground. The *Yezedees* are a singular race, who principally inhabit the mountain range of Sinjar in Mesopotamia, between the rivers Euphrates, Tigris, and Khabour; but are found also in great numbers in Kurdistan, and near Mosul, and a good many in the eyalet of Diyarbekr. There seems to be no doubt that they derive their origin and name from Yezid the son of the Caliph Moawiyah, who destroyed the race of Ali; although it is said by some that they are descended from a saint named Yezid, who lived about the same time (in the seventh century). Being detested by the Persians, on account of the destruction of the house of Ali by Yezid, and by the Arabs, as worshippers of the devil, they have been driven into the strong and isolated hills of Sinjar, and the rugged mountains and defiles of Kurdistan. Their religion (see *antè*, p. 124) is a strange mixture of worship of the devil with the doctrine of the Magians, Mahometans, and Christians; but religion, or religious ceremonies of any kind seem to be merely nominal among those of Sinjar, though those in Kurdistan practise various religious observances. Their manners and customs are very simple; their chief articles of food are barley bread, onions, figs, and grapes, either fresh or dried, according to the season; wheaten bread is very rarely seen. No kind of wine or spirituous liquor is used by them. They are of the middle size, with clear complexions, regular features, black eyes and hair, thin, muscular, and well-proportioned limbs. Their character is rather superior to that of their neighbours. They are brave, hospitable, and sober, faithful to their promises, much attached to their native soil, but cruel and vindictive, considering their proper means of support to be robbery and theft. They differ from the surrounding tribes in not being polygamists; and all the tribes intermarry with each other. They used to keep the whole country between Mosul and Nisibin in a constant state of alarm; but in 1837 they were reduced to subjection by the pasha of Diyarbekr, and registered as tributaries of the Sultan —(*Forbes; Visit to the Sinjar Hills in* 1838, *&c. Journal R. Geog. Soc. Lond.* IX. 409.)

The *Armenians*, one of the most ancient nations in the world, were the original possessors of Armenia, where, however, they now form only about a seventh part of the population, the rest of the inhabitants being chiefly Turks and Kurds. They call themselves in their own language *Hai-kani*, and are distinguished by an elegant form and an animated physiognomy. Being constantly exposed to the wars waged by the great neighbouring potentates, they have been forced in a great measure to leave their country; and, though originally a brave and warlike people, they have now become distinguished for their peaceful character, and their willing submission to the government of every country in which they live. Devoted to commerce and manufactures, they have prospered wherever they have settled, finding their way to places inaccessible to Europeans; and their scattered colonies now extend from Hungary and Venice to Calcutta, and even to China; and from St. Petersburg and Moscow, to the deserts of Africa. In their own country, as well as elsewhere, they generally live in large families, in a state of happy unanimity, under the patriarchal rule of their oldest member; but this family attachment is found to be quite compatible with insensibility, injustice, and perfidy towards persons of a different race. Their religion is a branch of the Oriental Christian Church (see *ante*, p. 119). There are, besides all these races, a great many Greeks spread over the country, but chiefly in the western parts of Asia Minor, who are also found along the southern coasts, and in the towns of Syria and Palestine; preserving everywhere their national characteristics and religion.

Syria being successively invaded by the Persians, the Greeks, the Romans, the Saracens, the Latin Crusaders, and the Turks, presents a very mixed population. The aboriginal Syrians form but a very small proportion. Turks are found in the towns, and used to be the only civic functionaries. Many Arabs are settled throughout the country as cultivators, and many Bedwins are also to be met with. The total population of Syria is estimated at from 1,250,000 to 1,500,000, of whom two-thirds are Moslem, and the greater part of the remainder Christians. In the northern eyalet of Aleppo are hordes of Turcomans and Kurds; and the mountains between Aleppo and Damascus are occupied, in great part, by the single tribes *Ansarians*, *Druses*, *Maronites*, and *Motoualis*. The *Ansarians*, called variously *Neceres*, *Nocres*, *Nocires*, *Nassarians*, *Nassaris*, *Ensyrians*, *Anzeyrys*, and *Ismailys*, occupy the mountains which extend from Antakia to the river Kebir, and are generally considered as a Mahometan sect, said to have been founded in the seventh century by one Nassar. But very little is in reality known about them or their religion; it appears, however, that they were established where they are now found, long before the Ottoman conquest; and all that can be said of their religion is, that it is a mixture of Mahometanism and idolatry. Their chief seat, and the residence of their emir, is *Masiat*, or *Maszyad*, a castle, 40 miles N.E. of Tripoli. The *Druses*, about 150,000 in number, dwell among the hills and in the valleys of western Lebanon, as far south and east as the Leitani or Quasmie river. Their origin is uncertain, but they are, with some probability, believed to be the descendants of the ancient *Ituræi*, a brave people, who possessed the same country in the times of the Romans, and, according to Niebuhr, the proper form of their name is *Durzi*, or *Turzi*, according to more modern authority, *Derze*, for *Duruz*. They are under the government of an emir, who resides at *Deir-el-Kamar*, House-of-the-Moon, a town situate midway between Lebanon and the sea, about 12 miles E.N.E. of Saide. Their religion is involved in mystery, though they are said to believe in one supreme being, who appeared for the last time incarnate in the person of Hakem, Khalif of Egypt, about A.D. 1030. This pretender to divinity was supported in his pretensions by a prophet, who came from Persia into Egypt; both the khalif and the priest perished by violence; but their doctrines survived, and their proselytes, persecuted as usual by the sect then in power, are said to have taken refuge in Lebanon. The Druses have found it their interest to tolerate differences of opinion in religious matters, and they have therefore united in a body, at different times, to oppose the crusaders, the sultans of Aleppo, the Mamelukes, and the Ottomans. After the Ottoman conquest of Syria, the Druses often descended from the mountains to harass the conquerors; but after the middle of the 16th century they became subject to the Porte, and, for the payment of yearly tribute, were allowed to maintain an almost undisturbed independence. They are in general fierce, restless, and enterprising, and their bravery even approaches to rashness. In time of extremity they can muster 20,000 men, horse and foot, armed with firelocks, the larger proportion being cavalry. The Druses, who compose two-thirds of this force, are a stout and well-made people, with a cheerful and rather reckless expression on their round faces, which are in general beardless, and rather fair. They wear their hair beneath the light Syrian turban, for in Lebanon neither the faith nor the customs of the Turks have ever been very fashionable. Some of them entertain very peculiar notions respecting religion; but as a body

they are said to be quite indifferent to it, following the Maronites or the Turks just as they find it convenient. On the mountain their emir is a Christian; when he visits the towns on the coast, he is a believer in the Prophet; he resides in a large and costly palace called *Beteddin*, close by Deir-el-Kamar. The Druse women wear tantooras, or horns, on the head, supporting a sort of veil, which gives them a very singular appearance. The Fellahs of the Ledja, south of Damascus, are also Druses; and to the east of Sanamein is a ridge of hills, called *Jebel ul Druse*, or the mountain of the Druses, the inhabitants of which are here governed by a prince of their own, independent of the emir beshir.

The *Maronites* occupy the hill country between Beyrout and Tripoli, called *Kesrouan*, *Kerouan*, or, improperly, *Castarouan*, and live in villages and hamlets round the convent of *Kannobin*, the seat of their patriarch. Being divided into various tribes, each cultivates his own little territory. They live peaceably and frugally in the bosom of their families, and beneath their humble roof the Christian traveller meets with a kind and hospitable welcome. The sound of bells and the pomp of processions attest the full liberty of conscience here enjoyed by the Christians. Two hundred monasteries rigorously adhere to the rules of St. Anthony, and numerous hermits have taken up their abodes in the grottoes and caverns of Lebanon. The Maronites derive their name from Maron, a saint of the fifth century, whose proselytes, having been stigmatised as heretics, sought refuge in the Kesrawan. After long braving the Saracen and the Turkish power, they were reduced at last by Sultan Murad III. in 1585, who penetrated into their country, compelled them to acknowledge his supremacy, and to pay a yearly tribute. In every other respect they remained uncontrolled. They have been received into the communion of the Roman church, which, however, according to its usual custom with heathen converts, still connives at their retaining some of their old opinions and practices, and particularly at the marriage of their priests. Their devotion, superstitious as it is, is fervent and steady, and throws an agreeable interest over their little territory, surrounded as it is by the darkness of Islam. Their numbers are about 150,000. The Maronites recognise no distinctions of rank, and have scarcely any form of government; the villages form so many little communities, and settle peacefully among themselves the disputes which elsewhere afford such a handle to governors to plunder and oppress their people. In personal quarrels, however, they exercise the barbaric right of vengeance, their religion having failed to impress upon them the most essential part of its morality, the forgiveness of injuries. They are all armed, and, when their strength is called out, can muster 35,000 men. Their monks cultivate the ground, and practise all the necessary handicraft trades. The priests are supported by the bounty of their flocks, which they are obliged to eke out by the cultivation of land, or the prosecution of a trade; even the bishops have only revenues equal to about £60 sterling a-year. But for this poverty the clergy are compensated by the great respect paid to them by the people, who kiss their hands whenever they meet them.

The *Montoualis* or *Metualis*, are Shiahs, or heterodox Mussulmen, who worship the Khalif Ali and his descendants, while they curse Abubekr, Omar, and Othman. They formerly occupied the valley El-Bekaa, and sometimes rendered themselves very formidable to the Turks. They are supposed to be ancient Syrians, though, as a distinct sect, their name does not occur before the 18th century. Their name signifies *Sectaries of Ali*. The Montoualis are now very much reduced, and are chiefly to be found in Eastern Lebanon, and among the Maronites. Their Emir resides at Baalbec; but the lower part of the valley is occupied by Turks.

The Arabic language predominates over the whole country; and the old Syrian tongue is spoken only in a few districts, chiefly in the neighbourhood of Damascus and Lebanon. The Arab and Turkish part of the people are Mussulmen. Of the Christian sects the most numerous are those of the Greek church; the Jacobites have also many adherents; and there are besides some European Christians, Armenians, Nestorians, and Jews. In fact, no country presents a greater assemblage of different creeds.

GOVERNMENT.—See TURKEY IN EUROPE.

PRODUCTIVE INDUSTRY.—Throughout the vast regions of Ottoman Asia agriculture is in the most wretched state, with the exception only of a few small districts, and the neighbourhood of the large towns. Manufacturing industry is a little more flourishing, particularly in the larger towns. It may even be said, that in dying cotton, silk, wool, and skins, the Turks surpass, or at least equal the most perfect European specimens of the same kind. But, generally speaking, there seems to be a complete stagnation of industry, enterprise, and energy. The principal arts and manufactures of Asiatic Turkey are: The silk stuffs of Aleppo, Damascus, Mardin, Baghdad, and Brusa; the cotton stuffs of Mosul, Damascus, Aleppo, Guzel-hisar, Diyarbekr, Smyrna, and Manisa; the cloth of Brusa, Tokat, Amasia, Trebizond, Rizah, Mardin, Baghdad, and Diyarbekr; the ordinary cloth of Khanak-kalesi, Guzel-hisar, and Hillah; the camlets and shawls of Angora; the carpets of Brusa, Kara-hisar, Pergamo, Aleppo, Damascus; the leather of Konieh, Kaisariyah, Kuskin, Diyarbekr, Orfa; the saddles of Aintab; the bridles of Urfah; the tobacco of Latakia; the opium of Kara-hisar; the stoneware of Khanak-kalesi and Hillah; the soaps of Damascus, Baghdad, and Aleppo; the cutlery of Damascus; the copper utensils of Tokat and Erzroum, and the glass of Mardin and Hebron.

COMMERCE.—Few countries in the world are better adapted than Ottoman Asia for being the centre of an immense commerce. Accordingly, from the highest antiquity, and during all the middle ages, this country was the seat of the greatest commerce in the world; but from want of safety to travellers, of great roads, of navigable canals, and encouragement on the part of the government, its present commerce is scarcely the shadow of what it was in former times. The central position, nevertheless, of these fine provinces between Europe, Asia, and Africa, the rich productions of their soil, the numerous products of the industry of some of their great towns, and the caravans of Damascus and Baghdad which convoy to Mecca the pilgrims of Europe and Eastern Asia, contribute still to give great activity to their commercial relations. The internal commerce, which is the most considerable, is carried on by caravans, as in other parts of Asia. Erzroum, Kara-hisar, Tokat, Angora, Brusa, Smyrna, Bussrah, Baghdad, Diyarbekr, Aleppo, Mosul, and Damascus, are the principal resort of the caravans from Persia, Arabia, and Europe. The maritime commerce is carried on almost entirely by Europeans except only at Bussrah; the English, the French, the Dutch, the Russians, and the Austrians, have the greatest share of it. Smyrna, Latakia, Tripoli, Acre, and Beyrout, are the principal places in the Levant; Trebizond is the principal mart on the Black Sea. The Armenians, and next to them the Jews and the Greeks, are, of the native population, most given to commerce. The principal articles of export are: silk, cotton, wool, leather, tobacco, copper, camels'-hair, goats'-hair, opium, saffron, gall-nuts, turpentine, storax, raisins, figs, and other dried fruits, the wine of Cyprus, skins, turkey-leather, and other articles of native manufacture, and several manufactured articles which are imported from India, Persia, and Arabia. The principal articles of import are: silk-stuffs, cloths, needles, watches, and other hardwares, mirrors, and other glass-ware from Bohemia and Venice, paper, tin, Nuremberg wares, porcelain, colonial produce, and many other articles. Arabia, Persia, and India, furnish a great part of the precious products of their soil, and the last country sends the produce of its numerous handicrafts. (See TURKEY IN EUROPE.)

DIVISIONS.—For administrative purposes, Asiatic Turkey is divided into 20 governments called *eyalets*, which are subdivided into departments, or shires called *Sanjaks* and *liwas*: some of the lat-

ter, however, being independent of the pasha, or governor of the eyalet within which they are geographically situate. Both classes of divisions are very unequal in respect of extent and population. Many wandering and mountain tribes, and, indeed, large tracts of country are only tributary; some are merely vassals, and others quite independent. The following table of these divisions is given by Balbi in his *Abrege*, as the nearest approach he could make, with the assistance of M. Jollannin, to the true administrative divisions of Ottoman Asia.

Eyalets.	*Chief Towns and Remarkable Places.*
I.—ASIA-MINOR, OR ANADOLI.	
ANADOLI. .	*Kutahya*, Is-nikmid or Is-mid, Brusa or Prusa, Moudania, Kidonia or Haivali, Pergamo, Sart, Smyrna, Guzel-hisar, Allah-Shehr, Ayasalouk, Antalia or Adalia, Ak-hisar, Kara-hisar, Angora, Kanghri, Kastemuni, Sinub, Boli, Bartine or Bartan, with several tribes of vassal Turcomans.
ADANA. . . .	*Adana*, Tarsous, Sis, Baias, Anemour, Selefkeh, Alaue or Alaia, and several Turcomans.
CARAMANIA.	*Konieh*, Laranda or Karaman, Ak-shehr, Ak-serai, Nikde, Gouronk, Maden, Kirshehr, Kaisariyah, Ladik.
MARASH. . .	*Marash*, Bostan, Aintab, Malatiyah, several tribes of Turcomans and Kurds.
SIVAS. . . .	*Sivas*, Tokat, Yuzgat or Ouscat, Amasia, Merzifoun, Chorum, Vizier-pasha, Unieh.
TREBIZOND.	*Trebizond* or *Trapezus* or *Taraboum*, Kerasun; Lazistan, the country of the Lazis, and independent tribes, lies along the coast east of Trebizond.
II.—ARMENIA, WITH PART OF KURDISTAN AND GEORGIA.	
ERZROUM. .	*Erzroum*, Kamakh, Maden, Erzingan, Kara-hisar, Gumushkhaneh, Baibout, Toprak-kalah.
KARS. . . .	*Kars*, Ani, Ardanuji.
VAN. . . .	*Van*, Mûsh, Betlis, Khoshab, Bayazid.
SHEHRZUR OF OTTOMAN KURDISTAN.—	*Kerkuk*, Shehrzur, Erbil, Baian, Suleimaniyah.
III.—MESOPOTAMIA OR ALJEZIRA, WITH ARABIAN IRAK.	
BAGHDAD. .	*Baghdad*, Meshed-Ali, Hillah, Meshed-Hussein, Anna, Nisibin, Mardin, Bussrah, Kornah.
DIYARBEKR.	*Diyarbekr* or *Kara-Amid*, Maden, Siverek.
RAKKA. . .	*Rakka*, Orfah, Bir, Tor, Khabour.
MOSUL. . .	*Mosul*, Elkosh.
IV.—SYRIA OR ELSHAM.	
ALEPPO. . .	*Haleb* or *Aleppo*, Killis, Alexandretta or Scanderoon, Beilan, Antakia or Antioch, Shogr or Jeer-shogr.
DAMASCUS. .	*Damascus*, Hamah, Homs, Tadmor or Palmyra, Jerusalem, Bethlehem, El Khalil or Hebron, Rayah or Jericho, Nablous or Sichem, Gaza, Ramlah, Jaffa.
ACRE. . . .	*Acre* or *Akka*, Beyrout, Sidon or Saide, Sour or Tyre, Nazareth or Nasra, Tabariah.
TRIPOLI. . .	*Tripoli* or *Tarabolous*, Latakia.

Cities and Towns in Asia Minor and Armenia.

SMYRNA (*Ismir* of the Turks) lat. 38° 29′ N., long. 27° 11′ E., is situate at the bottom or eastern extremity of the gulf of the same name, and is built in the form of an amphitheatre, on the slope of a hill, the top of which is crowned with a ruinous castle. Without being beautiful, Smyrna presents an agreeable appearance, and contains some well-built houses, which belong chiefly to the Franks, and form a pretty quarter of the town. The streets are narrow and dirty, with the exception of those which are covered. To its position Smyrna owes the rank which it holds among the most important trading places in the world. The extent and safety of its road for shipping, and the facility of its communications with the interior, have made it the general emporium of the Levant. The trade in dry fruit is immense. Smyrna now forms a small eyalet, governed by a pasha of three tails, and has a population of about 130,000, of whom 10,000 are Jews of Spanish origin. The Frank quarter is inhabited principally by the English, French, Dutch, and Italian merchants, with their families and servants, whose persons and property are exempt from Turkish rule; and in civil, commercial, or criminal matters, they recognise no other judges than their own consuls. In the magnificent cassino, which was built by subscription, are found all the principal periodical publications of Europe, and in the theatre an amateur company plays Italian comedies. There is also a Greek college; and a gazette is published in French. The summer heat is very great; the thermometer in July, in a cool room with the shutters closed, varies from 78° to 83°, and in the shade out of doors, from 84° to 94°; but the heat is generally tempered by a fine westerly breeze called the *imbat*, which continues from mid-day till sunset. Occasionally, however, hot winds blow from the south and burn up the country. In the immediate neighbourhood are the pretty village of *Bournabat*, where most of the Franks have their country houses, and the villages of *Bouja* and *Sedi-Kewi*, remarkable for their fine plains and numerous population.

Manissa (*Magnesia*), 25 miles N.E. of Smyrna, is a large town, with a flourishing trade and extensive plantations of saffron. It also contains a ruined fortress, and the tombs of Sultan Murad II. and his family. Population 100,000. *Fokia*, 25 miles N. W. from Smyrna, a flourishing town with a good harbour, built on the site of the ancient *Phocæa*, so renowned for its colonies in Spain and Gaul, among which the most distinguished was Masailia (Marseilles). *Vourla*, a small town, 20 miles W. by S. of Smyrna, built near the site of the ancient *Clazomenæ*, still contains traces of the mound formed by Alexander the Great. *Chesmeh*, *Chismeh* or *Tchesme*, 40 miles W. by S. of Smyrna, a small town situate on a bay, where the Turkish fleet was destroyed by the Russians in 1770. *Ayasalouk*, (Moon-town) 40 miles S. by E. of Smyrna, a miserable Turkish village, represents the ancient *Ephesus*, the remains of which are at a little distance, and consist of shapeless ruins and stone walls. The harbour is now only a pestilential marsh. *Scala-nova*, 45 miles S. by E. of Smyrna, a flourishing commercial town with a harbour, contained, before the Greek revolution, 20,000 inhabitants. *Palatia*, near the mouth of the Meander, a wretched assemblage of huts, appears to represent *Miletus*, one of the most flourishing commercial cities of antiquity. The ruins of its vast theatre are still to be seen. It is situated upon a brackish lake, connected with the Meander by a channel two miles long. *Gussi-hisar* (*Tralles*), 64 miles S. E. by S. of Smyrna, is a flourishing trading town, with cotton manufactures, and 30,000 inhabitants. *Tireh* or *Tirra*, 47 miles S.E. of Smyrna, a modern town, is nearly as large as Smyrna, though less populous. *Cassaba* or *Durgutli*, 35 miles E. of Smyrna, is a large town, with about 6000 houses. *Sart* (*Sardes*), 50 miles E., is a miserable village inhabited by a few Turks, on the

site of the splendid capital of the Lydian kings. The principal ruins consist of those of the great church, the temple of Cybele, and the tomb of Alyattes, the father of Crœsus, which consists of a conical hill of earth 200 feet high and 4000 round the base. Similar monuments of smaller size are found at a little distance. *Ak-Hissar* ancient *Thyatira*, 50 miles N.E. of Smyrna, is a town of 6000 houses, situate in a fertile plain, and surrounded by groves of delicious gardens. *Akhi-Serky* or *Ak-Serky*, ancient *Thiatira*, 35 miles E. of Smyrna, is said to contain more than a dozen of Christian churches, and the bulk of its population is Christian. *Pergamo* or *Bergamo*, 45 miles N., is a large and still flourishing town in the valley of the *Caicus Grimakeo*, although only the shadow of the ancient residence of the kings of Pergamus. Its magnificent temple of Æsculapius, its celebrated library, inferior only to that of Alexandria, and the invention of parchment (*charta pergamena*), give a distinguished place in history to this ancient city. *Hairadi*, named *Kidonia* by the Greeks, on the gulf of Adramyti, founded towards the end of the 15th century, became for a short time one of the most industrious, commercial, and polished cities of Asia Minor. It possessed numerous manufactories, a fine college, a library, a printing press, beautiful churches, 3000 houses, and 35,000 inhabitants, all of which disappeared in the late war between the Greeks and the Turks. Since 1821 Kidonia has been only a heap of ruins.

Brussa, or Prusa, lat. 40° 5′ 30″, long. 29° 1′ 45″, 63 miles in a straight line S. by E. of Constantinople, is situate in a fine plain 21 miles in length, behind which, to the south, rise the snowy heights of Olympus. The ordinary houses are of wood, the streets very narrow but clean and well-paved, and altogether it is a very fine city. It is overlooked by an old castle situate on a rocky and picturesque eminence, and is surrounded by extensive suburbs. The most remarkable buildings are the cathedral, the principal mosque, a large building, which dates from the Ottoman conquest of the city; the mosque of the Sultan Orkhan, with his tomb, and a well-frequented college; and the mosque of the Sultans Orkhan, Murad, and Bayazid. The city contains also a number of fine khans, built with stone, magnificent baths, and beautiful fountains. Formerly the capital of the kings of Bithynia, it was afterwards the capital of the Ottoman empire till the taking of Adrianople. Population 60,000. The adjoining plain is covered for miles with mulberry trees, which supply abundant food for the silk-worms that furnish the staple produce of the place. The adjoining mountains abound in the finest pasturage, timber, underwood for fuel, and springs of the purest water, which is profusely supplied to every part of the city. From the foot of Olympus there issue mineral waters, with a strong sulphureous odour, and of the temperature of 167° to 190° Fahrenheit, which are conducted into baths for the use of the citizens.

Modania, 17 miles N.W. of Brussa, a town on the gulf to which it gives its name, serves as the port of Brussa. *Isnik* or *Smirk*, a wretched pile of huts, which stand upon the site of *Nicæa*, the ancient metropolis of Bithynia, is celebrated for the first general council held there by the Christians in A.D. 325. Its thick walls, its towers, and gates are still in good preservation; 37 miles N.E. *Ismimid* or *Ismid*, 62 miles N.E., the ancient *Nicomedia*, an early residence of the kings of Bithynia, was made the capital of the Roman empire by Diocletian. No vestiges of its former magnificence remain. It contains about 700 families, and has the appearance of a modern town. *Aboulyont (Apollonia)*, situate on an islet in the lake to which it gives its name, contains 2000 inhabitants, who are chiefly fishermen, and live almost entirely upon the produce of the rich fishery of the lake, which is of considerable size; 20 miles W. of Brussa. *Mikhalich*, a large straggling town of 15,000 houses, 35 miles W. of Brussa. The south coast of the Sea of Marmora is overspread with celebrated ruins, among which the principal are those of *Cyzicus* (now *Balkiz*), one of the finest and most flourishing cities of Asia. Its remains are still to be seen not far from *Peramo*, a miserable village on the east side of the Peninsula, formerly the island of Cyzicus. *Foungar-bashi* or *Boumar-bashi*, southwest from the Dardanelles, a village supposed to occupy, or at least to be near to, the site of the ancient *Troy* or *Ilium*. There are no remains of the city, but on a neighbouring rock behind to be *Pergamos* (the citadel) are the ruins of buildings in irregular polygons, a cistern cut in the rock, and three heroic tombs, or barrows. Some marble pillars and other remains at *Chiblack* point out the site of *New Ilium* built by Alexander the Great, ruined by Sylla, and rebuilt by Julius Cæsar. *Novoli*, another village with antiquities, marks the site of *Dardania-Troas*, a city entirely ruined and deserted, but whose ruins still attest its ancient magnificence.

Kutahya (*Cotaeum*), 180 miles E.N.E. of Smyrna, 80 S.E. of Brussa, a large town, built in a picturesque situation, on the slope of Mount Pursak, and watered by the river Porsak, is considered the capital of Anatolli. Among its buildings the only one remarkable is an old mosque of singular architecture. Population 50,000. In the immediate neighbourhood is *Tunkali*, a place with famous warm baths. *Sol-Gaza*, 30 miles E. by S. of Kutahya, a ruin and village, is remarkable for its fine mosque, and still more for a Phrygian monument in its neighbourhood, visited by Colonel Leake, who, inferring from the words "To King Midas" cut upon its side, believes this tomb cut in the rock and covered with sculptures like those of Mycenæ, may be attributed to one of the Phrygian kings of the dynasty of Midas. If this be the case, it must have been formed between 570 and 740 years B.C. *Eskishehr*, a small town 30 miles N.E., the ancient *Dorylæum*, and important for its warm baths. *Tursa*, a small village, where the road begins to ascend the *Domanu-dagh*, a high mountain upon which there has been long established an hospice like that of the Great St. Bernard, to assist travellers wandering in the snow; for which purpose large dogs are kept. *Izmir*, a wretched village 7 miles S.E. of Brussa, deserves attention on account of its magnificent ruins of a great Hellenic city, and of a temple of Jupiter, which is said to be equal to the most remarkable Greek buildings yet remaining. *Karas-sar* (called also *Afioun-kara-hissar* Opium Black Castle), 54 miles S.S.E. of Kutahya, so called from the immense quantity of opium (*Afioun*) which is collected in its neighbourhood, and to which, as well as to its woollen manufactures, it owes its flourishing condition. Population about 60,000.

Konieh (*Iconium*), lat. 37° 50′, long. 32° 45′, 300 miles E. by S. of Smyrna, is a large town, in a rich and well-watered plain. Among its numerous mosques is remarked that of Selim, built on the model of Saint Sophia. Here is also the convent of the Mewlevis, founded by Jelaleddin Rumi in the 13th century, and the chief of all the establishments of the same kind in the empire. Konieh still possesses considerable trade and manufactures, and numerous medresses or colleges. The great flat plain to the east is dry in summer, but is flooded and impassable in winter. Population about 50,000. *Lazik-gehi-Karaman* or *Yurugun Ladik* (ancient *Laodicea*), is a small town 25 miles N. by W. of Konieh. *Karaman* or *Laranda*, 60 miles S.S.E. of Konieh, a large commercial town, near the ruins of *Laranda*, which have supplied materials for its buildings. *Ak-shehr* White Castle, 72 miles W.N.W., a flourishing city, is the seat of an archbishop, with 15,000 houses. The medresse or college of Bayazid, and the principal mosque, are remarkable buildings. *Ereghli (Heraclea)*, a small town, 84 miles E. by S. of Konieh, near a large swampy lake, which appears to be a continuation of that of Konieh, and emits its waters through a tunnel in the limestone ridge which bounds the plain to the south.

Tokat (Armenian *Erkegin*, Greek *Eudoxia*), lat. 39° 53′, long. 36° 40′, on a branch of the Kizil-Irmak, is a large town, with narrow but well-paved streets. It stands at the mouth of a long, steep, narrow, rocky defile, which widens a little on approaching the city, on the bank of a mountain stream, but so surrounded on three sides by lofty mountains, that the heat concentrated in the narrow valley sometimes becomes intolerable. The valley for about three miles above the town is filled with gardens and vineyards, and a number of rills of water run through it. The town is not esteemed healthy, autumnal fevers being very prevalent. Population about 30,000. As a commercial mart the import

tance of Tokat has passed away. *Kaisariyah*, 160 miles E.N.E. from Konieh, the ancient *Mazaca*, capital of Cappadocia, afterwards called *Cæsarea*, in honour of the Emperor Tiberius, is situate at the foot of the mighty and constantly snow-capt Mount Arjish, 4200 feet above the level of the sea. It is surrounded by a wall quite dilapidated, and has a castle within on the same level as the city; but neither of them could offer any resistance to cannon. It contains 8000 houses, 5000 Turkish, 2500 Armenian, and 500 Greek. The villages in the neighbourhood are large and populous, and the Christian inhabitants here display their riches and luxury in their country houses more than in any other part of Turkey. Kaisariyah is the principal commercial mart in the central part of Asia Minor; the inhabitants are remarkable for their activity and enterprise, and the natives are found assiduously following their pursuits in the remotest corners of the empire. The climate is warm in summer, and not severe in winter, and still it is not reckoned very healthy. The products of a warm climate, as melons, figs, pomegranates, and grapes are yielded; but the plain is neither fertile nor well cultivated, except merely around the town. The bottom of the mountain is covered with gardens, which produce fruits, and the yellow berry used in dyeing, for which Kaisariyah is so celebrated. The ruins of a more ancient town, destroyed by an earthquake, are close by. *Yuzgat*, 96 miles N. by W. from Kaisariyah, grew into importance under the fostering care of the Chapwaan Oglu family, who fixed their residence here; and from an insignificant village it became a considerable and flourishing town. It is a neat, clean, walled town, situate in a narrow valley, overlooked on all sides by rising grounds. N.W. from Yuzgat about 20 miles, is *Boghas-keni*, a village, near which are the remains of an ancient town, supposed to be *Tavium*.

South-east of Tokat lies the extensive eyalet or pashalic of Sivas, the capital of which is *Sivas*, the ancient *Sebaste* (so called in honour of the Roman Emperor Augustus, whose Latin title *Augustus*, the Greeks rendered in their own tongue *Sebastos*), 50 miles S. by E. of Tokat, situate in a plain, from 4 to 6 miles in breadth by 16 or 20 in length, watered by the Kizil-Irmak, and noted for grain of superior quality. The climate is severe, though remarkably healthy. The town covers a large area, within which are many ruins. It contains about 5000 Turkish, and 1200 Armenian families; and its position is very favourable for an important commercial city. The access from the Black Sea is easy, and has been facilitated by a military road. The city is situate in the centre of a district abounding in the first necessaries of life, and of a country which would require extensive supplies. The route by Sivas is the best to reach Malatiyah, Kharput, and Diyarbekr. The bazaars are extensive, and the khans numerous, and both are well supplied with goods. *Egin*, situate in a deep valley on the right bank of the Kara-su, or Western Euphrates, about 115 miles E. by S. of Sivas, contains 2700 houses, of which 2000 are occupied by Mahometans, the rest by Armenians; among whom the goitre is a frequent disease. *Arab-gir*, 30 miles first S. then S.W. from Egin, 15 caravan days (about 270 miles) from Aleppo, and only 11 (198 miles) from Trebizond. The town is situate in the midst of a forest of fruit trees, and contains about 6000 houses, of which 4800 belong to Mahometans, and 1200 to Armenians. The latter are principally engaged in manufacturing cotton goods from British yarn, and there are about 100 looms at work. The place is, in consequence, in a thriving condition, and is one of the most interesting towns in the interior as regards Trebizond. The climate is severe, and much snow falls in winter; but the summers are cool. *Keban-Maden*, 20 miles S. from Arab-gir, is situate in a ravine, near the Euphrates, in the neighbourhood of an argentiferous lead-mine, in which the greater part of its inhabitants, 400 or 500 families, are engaged. The mine produces annually about 1000 pounds of silver, and 195,000 pounds of lead. *Kharput*, 30 miles S.E. of Keban-Maden, is situate on an eminence at the termination of a range of mountains, overlooking an extensive, beautiful, and productive plain, and contains 1720 families. *Malatiyah*, 105 miles S.E. of Sivas, with *Aspusi*, 6 miles distant S.W. among the hills, may be considered as one town, containing 3923 families, who used to spend the seven summer months at Aspusi, and the five winter months at Malatiyah; but now confine themselves chiefly to the former, while Malatiyah is, in consequence, nearly deserted.

TREBIZOND (*Trapezus*), lat. 41° 1′, long. 39° 40′ E., on the southern coast of the Black Sea, has been a place of importance since its foundation by the Greeks in ages beyond the reach of authentic records. The town is built on the slope of a hill facing the sea, part of it being surrounded by a castellated and lofty wall, and is in the shape of a parallelogram (τραπεζους), whence it derives its name. On each side of the walled portion of the city is a deep ravine, filled with trees and gardens, and both ravines are crossed by long bridges. Overlooking the city is a citadel, which is rather dilapidated and neglected, and is commanded by neighbouring heights. There is no harbour for ships; but a small open bay at the east end of the town is used as an anchorage during the summer. After the autumnal equinox the Turkish and European vessels resort to *Platana*, an open roadstead 7 miles W. of Trebizond; but British vessels anchor at all seasons at Trebizond, and the anchorage there, even in winter, appears to be quite as secure as that of Platana. The city contains between 25,000 and 35,000 inhabitants, of whom between 3500 and 4000 are Greeks, from 1500 to 2000 Armenians, and the remainder Mahometans. Its present importance depends almost solely on its being the most convenient port of debarkation for merchandise destined for Armenia and Persia. *Kara-hisar*, 85 miles S.W. of Trebizond, contains 2500 houses, and has a considerable trade with the coast and the interior. *Keraun* (anc. *Cerasus*), is the port on the Black Sea with which its communications are most active, and is distant about 60 miles N. by W. The town is built around an old castle on the top of the isolated hill. Near the town are extensive mines of rock alum, from which it takes the distinctive appellation of *Shebh-khaneh* (alum-office, or alum works.) *Niksar*, the ancient *Neo Cæsarea*, 70 miles W. of Kara-hisar, is situate amidst a forest of fruit trees, on the east side of a very extensive and remarkably rich plain, watered by the Char-Shambah. *Gumish-Khaneh* (place of silver), on the river Kharshut, 40 miles S. by W. of Trebizond, a town which has grown up amidst the mines of argentiferous lead in the neighbourhood. These mines were once rich in silver, but the produce is now very small, and the people are, in consequence, reduced to great poverty. The whole district abounds in ores of copper and lead; but few mines are worked, and those which are in operation produce little from the ruinous system of management pursued. *Treboli*, a town, with copper mines, at the mouth of the Kharshut, 50 miles W. of Trebizond. *Surmenah*, *Rizah*, *Atenah*, *Khopah*, are places on the coast east of Trebizond, each consisting only of a street of shops, with one or more coffee-houses, and a khan or two. The inhabitants live in cottages scattered singly over the country. Rizah is an important and fertile district, with the most extensive bazaar on the coast, and is famous for the manufacture of a cloth, Mr. Brant calls it *linen*, made of hemp, and used throughout Turkey for shirts. *Unieh* (*Œnoë*), 130 miles W. from Trebizond, on the coast, a dirty town, built of wood, but occupying a most beautiful situation, and carrying on a thriving trade in cotton-stuffs, fruit, and wine.

Amasia, the ancient metropolis of Pontus, the birth-place of Mithridates, and of Strabo the geographer, stands on the west bank of the Jekil-Irmak, at its confluence with the *Chekr*, 60 miles from the sea. *Chorum*, 40 miles W. of Amasia, is a large town, situate in the midst of an extensive plain, through which a small stream flows southward to the Jekil-Irmak. It is inhabited by bigoted Mussulmans; there is scarcely a Greek or Armenian in the town, and, owing perhaps to its isolated position, a Frank was never seen in it before it was visited by Mr. W. T. Hamilton in October 1836. *Marsiwan* or *Merzifoun*, 30 miles W.N.W. from Amasia, is a town of 4000 houses, according to M. Fontanier, and possesses rich copper mines. *Samsoun* (*Amisus*), on the coast, midway between the Kizil-Irmak and the Jekil-Irmak. Population about 2000. *Sinub* (*Sinopè*), a very ancient Milesian colony, and afterwards capital of the kingdom of Pontus, still contains about 5000 inhabitants, and

the town is in a miserably ruined state. It contained in 1836 only about 150 Armenian and 300 or 400 Moslem families. The latter are nearly all Kurds; Kurdish is the common language; and indeed the whole pashalic of Bayazid forms a part of Kurdistan. *Mûsh, Moosh, Mousb*, a considerable town, with 5000 inhabitants, the residence of an hereditary Pasha, about 90 miles S.E. of Erzroum, in the valley of the Murad, or Eastern Euphrates. The Armenians of Mûsh have five churches, one of which, called the church of the forty steps, is said to be 1300 years old. About 15 miles S.W. of Mûsh, is the monastery of *Changuri*, a famous place of Armenian pilgrimage. *Bedlis, Betlis*, or *Bitlis*, a well-built commercial town, in a picturesque situation at the meeting of three valleys, a few miles from the south-west corner of the lake of Van, on the banks of a stream running to the Tigris, contains about 2000 Moslem and 1000 Armenian families.—(*Journal R. Geog. Soc. Lond.* VIII. 72.) *Van*, situate near the east side of the great lake to which it gives its name, in a large plain, studded with villages and gardens, is noted as one of the bulwarks of the Ottoman empire in its contests with Persia, and is a strong and commercial city, with about 12,000 inhabitants. It appears to have been in ancient times a place of great importance; it has been always called by the Armenians *Shamiramakert* (Semiramis' town), and the people of the neighbourhood still venerate the memory of the Assyrian kings, whose names they have preserved, in connection with several localities. The citadel is built on an isolated hill, believed by some travellers to be artificial, in the interior of which there are are large caverns and vaulted rooms, where remains of statues and other ancient objects are still sometimes found. But the most interesting relics are the inscriptions, in arrow-headed characters, which cover the entrance and the sides of the hill. Ruins and relics of the same kind are found not only in vicinity of the city, but in all the surrounding country. South-west of Van is *Erdremid* or *Artemid*, the ancient *Artemita*. The banks of the lake, particularly the eastern and southern sides, are very mountainous, and are partially covered with wood; the soil is fertile, and the pasturage excellent. Van is the seat of a Pasha, who is dependent on the Pasha of Erzroum.

§ *Cities, Towns, &c., in Syria and Palestine.*

HALEB (*Khelbon* of Ezekiel, *Chalybon* and *Berœa* of the Greeks, *Aleppo* of the Franks), situate on the banks of the Koikb, in N. lat. 36° 12′, and E. long. 37° 12′, was, of all the Ottoman cities, inferior only to Constantinople and Cairo in extent, population, and wealth; while, in respect of salubrity, the elegance and solidity of its buildings, and the neatness of its streets, it was superior to both of these. It is encompassed by walls three miles in circuit; but the suburbs were so extensive, that the total circumference was estimated at seven miles, and the population at 250,000. The city stands low, with nothing in the surrounding country that can add beauty or importance to its position. It is protected by a strong castle on the top of an immense mound, of a circular form, and surrounded by a wide ditch. By two successive earthquakes in 1822, more than half the city was destroyed, and its finest buildings ruined or considerably injured; and the destruction was almost completed by another earthquake in 1830. It is very slowly recovering from these disasters; and is still a large and important city, with a population of nearly 60,000 souls. Formerly its commerce placed it in the first rank among the cities of Asia, and it was the grand emporium of Syria, Arabia, Mesopotamia, and Armenia. It is still the emporium of Northern Syria, and is connected in extensive commercial transactions with Diyarbekr and the upper parts of Anatolia, and with Merdin, Mosul, and Baghdad. Since 1832, several British merchants have established houses at Aleppo. The principal manufacture of the city is that of stuffs, which are famous throughout the East, which is still extensively carried on. They consist of silk stuffs, with gold and silver thread; silk and cotton, flowered and striped; and striped cotton only, called nankeens. There are about 4000 looms employed, and about 4800 persons, men and children, producing an yearly value of about £250,000 sterling. The chief attractions of Aleppo are its gardens, which are watered by the Koikb, and produce abundance of fruit and vegetables, among which the pistachio nuts are much celebrated. The townspeople are chiefly dependent for water on an aqueduct, attributed to St. Helena, which still brings water from a distance of several miles. Aleppo is about 60 miles from the sea on the one side, and is equally distant from the Euphrates on the other.

In the eyalet of Aleppo: Scanderoon, Iskenderûn, or *Alexandretta*, 60 miles W.N.W. of Haleb, is a small town situate in the midst of pestilential marshes, on the southern shore of a fine gulf, which penetrates 26 miles inland from Ras Khanzir, gradually diminishing in breadth from 10 miles to 7. The bay is bordered on the south and east sides by the lofty mountain ridges of Amanus, which, in some places, rise gradually from the sea, and, in others, are two or three miles inland, leaving between them and the shore small plains composed of a rich light soil. The harbour of Scanderoon consists of a fine bay running in south-east from the gulf, and protected from all winds; it is capable of containing in perfect security from 30 to 35 sail of ships. *Latakia* (anc. *Laodicea*), 90 miles S.W. by W. of Haleb, near Cape Ziaret, is a small town with a well-sheltered harbour, which has also now become one of the ports of Aleppo. *Antakia* (anc. *Antiochia*, or *Antioch the Great*), 60 miles W. of Aleppo, on the banks of the Orontes, once the proud capital of Syria, with 700,000 inhabitants, is now a ruinous town, with houses built of mud and straw, narrow dirty streets, and a population of less than 20,000. Its ancient walls, about five miles in circuit, are still mostly standing, but are in a very decayed and mouldering condition. The river, which is from 100 to 150 feet wide, and is crossed by a substantial bridge, was formerly navigable to the sea, and might easily be rendered so again, for larger vessels than the boats which are used upon it. The fall of the stream scarcely exceeds 5½ feet a mile. *Suadeah*, a small town in a plain north from the mouth of the Orontes, near which is *Kepse*, in the ruins of the ancient *Seleucia Pieria*, the port of Antioch, where the masonry of its magnificent harbour is still in so good preservation, as to be capable of repair. *Jeboul*, 20 miles S.E., a small village in the Valley of Salt, so called from a large *sibkah*, or salt marsh, where a great quantity of salt is gathered. *Sermein*, 22 miles S.W., another small village, with numerous cisterns cut in the rock, and several caves inhabited by the natives. *Edlip*, a small town of 1000 houses, surrounded with olive trees, 30 miles S.W. *Reiha* and *Benin*, two little towns, containing ruins, 40 and 45 miles S.W. *Famiah* or *Kalat-el-Medyk*, 70 miles S.S.W., upon the Orontes, occupying the site of the ancient *Apamea*, where the kings of Syria had established their principal stud, and where they maintained 500 elephants. Its rich pasturages still attract a number of Bedwins, and the abundant fishery in the lake *El Taka*, which communicates with the Orontes, produced to the governor, at the date of Burckhardt's visit, £3000 a-year. *Hamah*, 93 miles S. by W., the *Hamath* of Scripture, and the Greek *Epiphania*, a large town on the Orontes, an industrious, commercial, and flourishing town, the mart for supplying the wants of the Arab tribes, who roam over the deserts between Syria and the Euphrates. Ali-Bey gives it a population of 100,000; Burckhardt, of only 30,000. *Homs*, 115 miles S. by E., the ancient *Emesa*, famous for a splendid temple of the sun, whose priest, Heliogabalus, was elected Roman emperor, A.D. 218. The plains of Homs have been the scene of two great and decisive battles; the first ending with the defeat of Zenobia, queen of Palmyra, by the Roman emperor Aurelian; and the second, 7th July 1832, when nine pashas of three tails, with their respective forces, were defeated by Ibrahim Pasha, and their army put to flight. *Palmyra*, 160 miles S.E. by S., the *Tadmor* of Scripture, a mass of splendid ruins in an oasis in the desert, the remains of a great commercial city which attained the height of its prosperity in the third century, when its queen, Zenobia, defied the arms of Rome. The present inhabitants are a few Arabs, who occupy about 30 mud huts among the ruins,

and obtain a subsistence by cultivating a few detached spots, and feeding some flocks of goats and sheep. Two small streams impregnated with sulphur run among the ruins, and are lost in the sands. In the seventh century Palmyra was still so fortified, as to stand a siege from the Kalijh Merwan, but after that period it seems to have fallen gradually to decay. *Beilan* or *Bylan*, a small town near the western entrance of the great pass, leading between Mounts Rhosus and Amanus from Aleppo to Scanderoon. From Beilan to Scanderoon the descent is very striking: the heights are lofty, picturesque, well covered with wood, and a great part of them planted with vines, disposed in the neatest order, and carefully cultivated; the summit of the pass is, by barometrical measurement, 1584 feet above the Mediterranean, and the mountain above it reaches 5337 feet. *Antab*, 65 miles N. by E., near the source of the Koikh, is a large town, with 20,000 inhabitants, in a rich and fruitful district. *Menbij* or *Bambuch*, 56 miles E. by N., where the walls still standing attest the ancient greatness of *Mabog* or *Hierapolis* (*Holytown*), sacred to the worship of the Syrian goddess Astarte, called in Scripture the Queen of Heaven. The goddess was represented by a monstrous image, half woman, half fish, and had a magnificent temple, served by 300 priests, and filled with rich offerings, which were plundered by Crassus, the co-triumvir of Cæsar and Pompey. *Shoar*, a town on the Orontes, on the road from Aleppo to Latakia, which was destroyed by the earthquake of 1822.

TRIPOLI, lat. 34° 26', long. 35° 52', called by the Turks *Tarabolus*, is built on the declivity of a hill, about a league, or half an hour's journey, from the sea shore, near the mouth of the river Kadisha. It is one of the neatest towns in Syria, the houses being all well built of stone, and neatly fitted up within; it is surrounded by luxuriant gardens, which produce abundance of oranges and lemons. The population amounts to about 15,000; among whom are several Europeans merchants, and consuls for France, England, and Austria. The principal article of export is the soap produced on the neighbouring mountains, of which it formerly exported 800 quintals every year, at about £80 the quintal: but its commerce has been lately on the decline. The next article of export is sponges, which are procured on the sea shore, the best being found at some depth in the sea: soap is exported to Tarsous for Anatolia and the Greek islands, as well as the alkali for making it, which is procured in the eastern deserts; the khan of the soapmakers is a large well-built edifice. The marina or port forms a little town by itself. Tripoli was formerly the seat of a Pasha, whose command extended from the river Ibrahaim to Latakia and eastward to the mountains.

In the eyalet of Tripoli are: *Batrun*, 15 miles S. of Tripoli, a small town of 300 or 400 houses, with a harbour for boats or small vessels. *Belmont*, 2 hours S. of Tripoli, a convent on a very high rocky mountain, of difficult ascent, which overlooks the sea. *Kanobin*, 14 miles S. E., a convent, the residence of the patriarch of the Maronites, may be considered the capital of that tribe. *Tortosa*, 30 miles N., once a very strong city, still exhibits the remains of two walls half a mile in circumference, but is now a miserable little town. Nearly opposite is the island *Ruad*, the *Arvad* of the Scriptures, the *Aradus* of the Greeks and Romans, once occupied by a Phœnician city, with houses of 5 or 6 storeys, where commerce and liberty had collected an immense population. It is now a naked rock. Only a few masses of strong walls, and numerous cisterns cut in the rocks, attest its former existence. *Jebileh* (*Gabala*) on the coast, 35 miles N. of Tortosa, is remarkable only for its antiquities, its tombs cut in the rocks, and its mosque of Sultan Ibrahim, which was demolished by the earthquake of 1822. *Jebail* or *Gebail*, 20 miles S. by W. of Tripoli, is the ancient *Byblos*, the chief seat of the worship of Adonis, whose beauty and tragical history occupy an important place in classic mythology. About a mile from the town flows the river *Ibrahim*, the ancient *Adonis*, the periodical reddening of whose waters, as if commemorative of the shed blood of Adonis, gave occasion to a famous Phœnician festival. Near Gebail is a fine sponge fishery. *Masiat* or *Masyad*, 40 miles N. E., a small town, the principal place of the Ansarians.

ACRE, or AKKA, or ST. JOHN D'ACRE (*Ptolemais*), lat. 32° 54', long. 35° 8', the capital of an eyalet, was a place of great importance in the time of the Crusades, and sustained many sieges alternately from the Saracens and Christians. It is memorable in modern history for the gallantry with which it was defended in 1799 against Buonaparte, who, after spending 61 days before it, was obliged to retreat. It was afterwards strongly fortified by Jezzar Pasha, which enabled it to endure a siege of seven months from the Egyptian army in the winter of 1831-2. Its fortifications were subsequently repaired and improved: but on 3d November 1840 the town was reduced to a heap of ruins by a three hours' bombardment from the British fleet, acting as the allies of the Sultan, and the fortress evacuated by the Egyptians. It stands at the north-east side of a fine bay, near the mouth of the river *Naamany* (*Belus*). The harbour of Acre is the best on this coast. Acre is the principal mart for the cotton of Syria, and the principal commercial nations of Europe have consuls here.

Mount Carmel, 8 or 9 miles S.W., forming the south-west side of the bay of Acre, terminates in a rocky promontory about 2000 feet high, and contains a number of grottoes once occupied by the cells and chapels of the austere order of monks called Carmelites. A very few still remain, who lead a recluse life, and are venerated even by the Mahometans, who supply their wants. The mountain bears the traces of ancient aqueducts, and of plantations of vines and olives, and on the top is a monastery built originally by the empress Helena, and recently restored in a very substantial and elegant style, chiefly at the expense of the late king of France, Charles X. At the foot of the hill, on the southern shore of the bay of Acre, is *Caipha*, a walled town, with about 3000 inhabitants. *Kaisariyah* (Greek, *Kaisareia*, Latin, *Cæsarea*), 20 miles S.S.W. of Acre, founded by Herod the Great in honour of Augustus Cæsar, and one of the finest and most magnificent cities of the East, so celebrated in the first age of Christianity, and so important during the Crusades, has now scarcely a single inhabitant; but the preservation of its walls, its harbour, and its monuments, says Count Forbin, inspires an indefinable surprise. *Nazra* (*Nazareth*), 20 miles S. E. of Acre, a mean and wretched village or town of 3000 inhabitants, contains an extensive building, the Latin convent; and the church of the Annunciation is the finest in Palestine after that of Bethlehem and the church of the Holy Sepulchre at Jerusalem. Another church contains several grottoes now converted into chapels, where popular belief places the kitchen, the bedchamber, and other parts of the house of the Virgin Mary; and not far from this, tradition shows the place where the angel Gabriel appeared to Mary, Joseph's work-shop, and the school to which our Lord went to be taught with other boys. Near Nazareth is *Cana*, a pretty little town of about 300 inhabitants, and *Mount Tabor*, the traditionary scene of the Transfiguration, where within a grotto have been built three altars in memory of the three tabernacles which Peter proposed to build. Once a-year, on the day of the Transfiguration, the Latin fathers celebrate mass here. Tabor is a conical hill, nearly detached from those around it; its form is singularly regular; the summit is flat, and commands a most magnificent view. In the same neighbourhood are the reputed scenes of several other miracles, to which the monks go in procession every year to chant the gospel on the day of their commemoration. *Tabarieh* (*Tiberias*), 30 miles E.S.E., a town with about 1000 inhabitants on the south-west shore of the Sea of Galilee, was nearly destroyed by an earthquake in January 1837. It was one of the four holy cities of the Jewish Talmud, and the residence for 350 years after the destruction of Jerusalem of the principal Jewish doctors, who founded there a school of great celebrity. *Safed* or *Safiad* or *Szafiad*, 27 miles E. by N. of Acre, a small, but well built and flourishing town, of about 600 houses, was swallowed up by the earthquake of January 1837. It was one of the four holy cities of the Jews, from which they sent forth missionaries to seek out their poor brethren; it contained a college and a printing press; and very near it was Jacob's house, consisting of magnificent tombs cut in the rock, which the Turks consider as the ancient

abode of the patriarch, and the citadel, which appeared to be one of the most ancient structures in Palestine; its walls were of extraordinary thickness and strength, and are often mentioned in the wars of the crusades. *Banias*, a village of about 150 houses, supposed to be built on the site of the ancient Dan; near which one of the branches of the Jordan issues from a cavern under a precipice. *Sûr* or *Tyre*, 28 miles N. by E. of Acre, the queen of the sea at the dawn of profane history, the cradle of commerce, and the chief city of Phœnicia, contained in the latter half of the 18th century only about a dozen of wretched huts, which sheltered a few fishermen. It afterwards began to recover, and now forms a considerable town, is well built, and contains several mosques, churches, and bazaars. The original Tyre stood on the mainland, but that having been taken and destroyed by Nebuchadnezzar, king of Babylon, the Tyrians built a new city on a small island off the coast, where they were again besieged by Alexander the Great, who joined the island to the continent by an immense mound, which now forms an isthmus. *Saide* (*Sidon*), the mother city of Tyre, 25 miles farther north, is still a considerable town, though somewhat decayed.

Beyrout or *Beirout* 65 miles N.N.E. from Acre, and 48 miles S.S.W. of Tripoli, one of the ancient cities of Phœnicia (*Berytus*), is situate in a lovely plain, with fine scenery all round. It is the port of Damascus and central Syria, and has more commercial activity than any other Syrian port. Many merchants reside in Beyrout, besides the consuls and agents of the various European powers. The town and neighbourhood have been of late greatly improved. A new lazaretto has been built by Ibrahim Pasha; and valuable productive mines of coal and iron have been found in the neighbourhood, within a few miles of the town. The white houses of the town, sloping up from the sea, are encompassed by vineyards and mulberry gardens, and the numerous villas of its merchants. That singular plant, the prickly pear, is very abundant, and often composes in part the hedges of the paths and gardens, where it is an effectual guard against forbidden feet. *Antoura*, 10 miles E. of Beyrout, is a beautiful and celebrated monastery; and three hours north of it is *Larissa*, a charming monastery, built in the Italian style, in a very elevated situation; not far from which is *Bezommar*, the finest and richest convent of Kesrouan, built upon a high mountain. *Zahlé*, 22 miles E. of Beyrout, a small town, is rapidly increasing, and is one of the places where the coal and iron have been found. *Deir-el-Kamar*, 13 miles S.E., the chief town of the Druses, consists of a large village, with 15,000 or 18,000 inhabitants, and a large *serai* or palace, which has no pretensions to elegance. *Nahar-el-Kelb* (*Dog River*), which reaches the sea about 12 miles north of Beyrout, is the ancient *Lycus*, which, according to Strabo, was navigable, though very rapid. The mountains, which are here very high and steep, come down to the sea, leaving only the road between them and the bay. In the neighbourhood, the sides of the rocks are in many places covered with Greek and Latin inscriptions, and with symbolical figures, whose meaning cannot be deciphered. *Baalbec*, at the head or north end of the valley Bekaa, near the source of the Leitani, 50 miles E.N.E. of Beyrout, formerly a considerable town, is now a mere village with 200 inhabitants. It occupies the site of *Hel opolis* (Sun-town), and contains several splendid remains, the principal of which is that of the temple of Baal, or the Sun-god, a beautiful building, with a Corinthian peristyle, built in the reign of Antoninus Pius, on the site of a more ancient fabric, fragments of which are still visible. North of Baalbec is the highest part of Lebanon, and on one of the roads from Baalbec to Tripoli are the ancient *cedars of Lebanon*, which the people of the country believe to be the remains of the identical forest which furnished the timber for Solomon's temple. Only seven of the old trees remain, but there are many hundreds of young trees growing up to supply their places. An ascent of three hours from the cedars brings the traveller to the snow-capt top of Lebanon, from which there is a splendid view of the mountain regions, of the plains at their base, and the not far distant Mediterranean. Before reaching this point, however, vegetation has expired, with the exception of a few stunted cypresses, which lose their spiral form, and, throwing out their branches sideways, have the appearance of small oaks. Every year, on Transfiguration day, the Maronites, the Greeks, and the Armenians, celebrate a mass at the foot of one of the ancient cedars, on a homely altar of stone. The nearest village to the cedars is *Bshirrai*, or *Bisharra*, 18 or 20 miles S.E. of Tripoli.

DAMASCUS, (EL SHAM of the Arabs), lat. 33° 29′, long. 36° 34′, situate in a beautiful plain, on the east side of Eastern Lebanon, watered by numerous streams which flow from the mountains eastward into the desert, where their surplus water forms a lake or marsh, called the *Bahr-el-margi*, Lake of the meadows. The plain is so extensive, that the hills which bound it to the north and south can merely be discerned from the opposite sides. Towards the north-west the mountain *Ashlun* bounds it in the distance, and on the south-east it extends to the *Jibbel-Haouran*. The city stands on the west side of the plain, not more than two miles from the place where the river *Barrada* issues from a cleft in the mountains, is studded with mosques and minarets, and is encompassed with gardens, extending in common estimation not less than 30 miles round, which gives it the appearance of a noble city in a vast wood. The gardens are planted with fruit trees of all kinds, and are kept fresh and verdant by the waters of the Barrada, which is distributed by canals and streamlets. The city is built of brick, and its streets are narrow and gloomy, the inhabitants reserving their magnificence for their interior courts and palaces. Several of the streets have rivulets running through them, which furnish plentifully the great eastern luxury of water. The principal building is the great mosque, which was formerly a Christian church, and now possesses so peculiarly sacred a character, that Franks are rarely permitted to enter it. This cathedral is one of the finest that the zeal of the early Christians produced; the architecture, which is Corinthian, is very superior in beauty and variety to that of any other mosque in Ottoman Asia. Next to it in architectural importance is the grand khan, a large and splendid building, with a very lofty roof supported by granite pillars, and surmounted by a large dome in the centre. The inhabitants of Damascus, amounting to about 100,000, have a bad reputation in the east, where *Sham Shoumi*, "the wicked Damascan," has even passed into a proverb. Formerly they were exceedingly fanatical, but since they fell under the Egyptian yoke, they have learned to be more liberal; European merchants have settled among them, and a British consul has hoisted his national flag in this holy city. Damascus has long been the most flourishing city in Syria, a distinction which it owed to the excellent character of several successive pashas, through whose exertions the whole of the territory assumed an improved and cultivated appearance. It has lost the manufacture of sword blades, for which it was famous in the middle ages; but it still has considerable manufactures of silk and cotton; and the fruits of the neighbouring plain, dried and prepared into sweetmeats, are sent to every part of Turkey. Damascus is a place of the highest antiquity, and is the point of union for the caravans of pilgrims from the north and the east of Asia, who travel towards the Holy Land of Arabia under the guardianship of its pasha. On this account it has received the name of "the Gate of the Kaaba;" but, what is of more importance, the resort of pilgrims produces a great trade, the pilgrims being careful, and indeed being expressly allowed by the Koran, to combine traffic with the more pious object of their journey. Ophthalmia and intermittent fevers are very prevalent; the former disease is attributed to the extensive irrigation, and the latter to the exhalations of the Bahr-el-margi, which, in summer, becomes a pestilential swamp. It is 140 miles N.E. by N. of Jerusalem; 180 S. by W. of Aleppo, and 60 miles E. by S. of Beyrout. *Salahieh*, a considerable village north-west of the city, contains numerous villas and gardens, and is the summer retreat of the wealthy Damascans. About a day's journey to the north-east, at *Malool*, is a number of curious grottoes, inhabited by Syrian Christians.

To the south of Damascus, and east of the Jordan, are: *Bozrah*, the ancient *Bezer* or *Bozrah*, 63 miles S., celebrated for its vineyards, but now inhabited only by about fifteen families. It is, ac-

vertheless, described by Burckhardt as the largest town in the Hauouran, including its ruins. *Jerash* (*Gerasa*), 40 miles S. by W., on a small stream, in a valley on the south-west side of Mount Gilead, is quite deserted, but the traces of its ancient walls remain, inclosing three splendid temples, two amphitheatres, porticoes, baths, and hundreds of columns, which vie even with those of Palmyra.

JERUSALEM EL KHODDS of the Arabs', lat. 31° 48', long. 35° 14', stands on part of four small hills, nearly surrounded by deep ravines, and is enclosed with Gothic embattled walls, about two miles and a half in circumference. The houses are heavy square masses, very low, without chimneys or windows, with terrace roofs or domes on the top, and presenting the appearance of prisons or tombs. The streets are narrow, dusty, and unpaved. The population has been variously estimated at from 20,000 to 30,000. The manufactures consist chiefly of objects accounted sacred; as shells of mother-of-pearl, considered as badges of pilgrimage, crosses and beads made of the stones of dates, of hardwood, or of black fetid limestone from the Dead Sea. These holy toys are purchased in large quantities by pilgrims and travellers. The principal support of the city is derived from the numerous pilgrims who resort to it from all parts of the east, and even from Spain, to visit the holy places. The principal and most conspicuous edifice is the mosque of Omar, built on the site of Solomon's Temple, and inferior in holiness only to the Beitullah 'House of God' at Mecca. It is an octagon, standing in the middle of an oblong square area, paved with white marble. The walls are externally covered with painted tiles, adorned with arabesques and verses from the Koran in gold letters, and altogether, it is one of the finest buildings in the Mohammedan world. It stands on the east side of the city, overlooking the deep valley of Jehoshaphat. The *Church of the Holy Sepulchre*, the grand object of attraction to the Christian pilgrims, was built originally by Helena, the mother of Constantine the Great, on a site which was supposed to include the scene of the greatest events of the history of our religion, the crucifixion, the entombment, and the resurrection of our Saviour. It contained also, till recently, the tombs of Godfrey and Baldwin, the first Latin kings of Jerusalem, which, however, have now disappeared; and a rent is shewn in the natural rock, supposed to have been produced by the earthquake which happened at the crucifixion. In October 1808, the ancient church was destroyed by fire; and in its stead the present building was erected, at an expense of upwards of £200,000, by the Greeks and Armenians, whose clergy have, in consequence, usurped the principal charge of the holy places, which was formerly possessed by the Latins. Of the thousands of Christian pilgrims who annually visit Jerusalem during Lent, almost the whole are of the Greek, Armenian, and other oriental churches, with scarcely a Catholic among them. Baron Geramb states, that at the period of his pilgrimage, in 1832, there were only himself and three other Catholics among 4000 pilgrims. There are three convents, belonging respectively to the Latins, the Greeks, and the Armenians, where travellers and pilgrims are hospitably entertained. The Mount of Olives overlooks the city on the east side, on the summit of which is a mosque, built on the site of a church erected by St. Helena, and occupying the very spot from which Christ ascended. In a kind of chapel, in the centre, is to be seen the print left in the rock by the left foot of our Saviour.—(See CEYLON.) The temperature at Jerusalem is exceedingly changeable; it has happened, that in the morning the heat has been suffocating, while at night snow has fallen. The city stands about 2750 feet above the level of the sea in the midst of a hilly country which is little better than a desert.

Bethlehem, 7 miles S.W. by S. of Jerusalem, the place where our Saviour was born, is still a large village, with 3-00 inhabitants, and contains a fine church, built over the site of the place of the nativity, and visited of course by numbers of pilgrims. *El-Khalil* (*Hebron*), 20 miles S. by W., in a country less arid than that around Jerusalem, has a population of 4000 or 5000 Turks and Jews. It is a pretty cheerful-looking town, on the slope of a hill, surrounded with vineyards and olive grounds. The magnificent church built by the empress Helena on the supposed site of Abraham's tomb, has been converted into a mosque, entrance to which is allowed only to Mussulmans. *Santa Saba*, 8 or 9 miles S.E. of Jerusalem, a monastery remarkable for its situation on a height, which rises precipitously several hundred feet from the deep valley of the brook Kedron. Beside it are numerous grottoes, which are said to have been inhabited by more than 10,000 monks at the epoch when St. Saba introduced the monastic life into Palestine. In continual danger from the wild Arabs, the convent appears like a fortress, with immensely strong and lofty towers. *Jericho*, 14 miles N.E., is represented by the modern *Rayah*, a miserable village of about 50 huts, or by some ruins in its vicinity, in a hot and dirty circular plain. *Nablous*, 30 miles N. of Jerusalem, one of the most beautiful and flourishing towns in the Holy Land, stands in a bold and fertile valley, surrounded by hills and embosomed in groves and gardens. The inhabitants, about 10,000, are employed in making soap and other articles for the neighbouring country. Nablous seems to be the metropolis of a very rich and extensive district, abounding with all the necessaries of life; it occupies the site of the ancient *Shechem*, which became the capital of the Samaritans after the destruction of Samaria by Shalmanaser. Its modern name is a corruption of the Greek *Neapolis*, New town. In its neighbourhood is the tomb of Joseph and the well of Jacob. *Sebasta*, 37 miles N. by W. of Jerusalem, the ancient *Samaria*, which was rebuilt by Herod the Great, and named *Sebast*, in honour of his imperial patron, Sebastos Kaisar (Augustus Caesar), and adorned with a temple of Sebastos, and other magnificent works. Its situation is extremely beautiful and naturally strong, on a fine large insulated hill, compassed all round by a broad deep valley, which again is surrounded by four hills, and cultivated in terraces to the top, sown with grain, and planted with fig trees and olive-trees. The hill of Samaria likewise rises in terraces to a height equal to any of those around it. The present village is small and poor; but on the hill in different places are remains of the ancient buildings. *Jaffa* (*Jaffa* or *Yaffa*), 40 miles N.W., formerly *Joppa*, one of the most ancient sea-ports in the world, its history stretching far back into the twilight of the early ages, is situate in a fine plain on the shore of the Mediterranean, and owes its continued celebrity and importance to its being the port of Jerusalem. As a station for vessels it is one of the worst on the coast. The present town stands on a promontory jutting into the sea, rising about 150 feet above its level, and offering on all sides picturesque and varied prospects. The interior of the town has all the appearance of a poor village. The streets are very narrow, uneven, and dirty; the inhabitants are estimated at between 4000 and 5000, of whom the greater part are Turks and Arabs; the Christians being only about 600, and consisting of Roman Catholics, Greeks, Maronites, and Armenians. The Latins, Greeks, and Armenians, have each a small convent for the reception of pilgrims. *Ramlah*, 35 miles N.W., on the road from Jerusalem to Jaffa, supposed to be the ancient *Arimathea*, is a pleasant town, situate in a fertile plain, with a population of 5000, who are principally engaged in agriculture. *Scalona*, 50 miles W. by S., an inconsiderable town, representing the ancient *Askelon* or *Ascalon*, a city of the Philistines. Askelon was of great note among the ancients for a temple of Derketo or Astarte, the Ashtaroth of scripture, who was here worshipped in the form of a mermaid, and is said to have been the mother of Semiramis. *Gaza*, 56 miles S.W., is a little town with 4000 or 5000 inhabitants.

§ *Cities, Towns, and Remarkable Places, in Algezira or Mesopotamia.*

DIYARBEKR or DIARBEKR, lat. 37° 56', long. 39° 52', the ancient *Amida*, is situate on the right bank of the Tigris, with intervening gardens between the river and the town. The town in its prosperity contained 40,000 families or houses, and numberless looms in constant work; it enjoyed an active trade with Baghdad in Indian, and with Aleppo in European produce, and was one of the most flourishing and wealthy cities of Asia. The plain was cultivated in every part, and covered with villages

and within three miles of the gates were several villages, each containing from 400 to 500 houses and more than one Christian church. But since the commencement of the present century, all this prosperity was destroyed by the Kurds, who plundered the caravans, and kept the city in a state of siege. The assailants were repressed by Reshid Pasha in 1837, and the communication re-opened; but since his defeat at Nezib, by the Egyptians, in 1839, the Kurds are said to have again broken loose. The climate, though excessively hot in summer, cannot be considered unhealthy, and in winter the temperature is delightful. The Tigris is not used as a channel of communication so high up, but rafts of timber are sometimes floated down from the mountains above the town.

About 36 miles north-west of Diyarbekr, is *Arghaná*, situate under a lofty peak, surmounted by a large Armenian convent, which overlooks a vast plain. It contains about 600 families, but appears in a very dilapidated state. Ten miles N. by W. is the copper mine of Arghana (*Arghaná-Maden*), around which are collected 743 families, of which 270 are Greek, 173 Armenian, and 300 Turkish, the first and the last being all engaged in directing or working the mines, the Armenians are tradesmen or artisans. From the mine to the town the road lies over steep, difficult, and barren mountains. In this neighbourhood, also, the sources of the Tigris are only 10 miles distant from the waters which flow to the Murad. In the district of Diyarbekr, 24 hours' distant, is *Sert*, believed by D'Anville and Kinnear to represent the ancient *Tigranocerta*; but according to M. Saint Martin, Diyarbekr itself is the Tigranocerta, where Tigranes, king of Armenia, was defeated by Lucullus, 67 years B.C.

In the valley of Diyarbekr, or the upper Tigris, there are no other places of any importance. The watershed between the Euphrates and the Tigris, in this neighbourhood, is the *Karajeh-dagh*, which extends in a direction parallel to the Tigris, at no great distance from the river. Between these mountains and the Euphrates itself, lies the pashalic of Orfa, which contains *Orfah*, the ancient *Edessa*, 40 miles east from the Euphrates, on the banks of the little river *Daisan*, which, after joining the *Giallab*, falls into a small lake about 25 miles below the town. Orfah is built on parts of two hills, and in the valley between them, and is surrounded by a wall three or four miles in circuit. The streets are narrow but paved, and not dirty, the bazaars numerous and well supplied, the khans also numerous, and some few caravansaries excellent. The number of mosques with minarets, seen from without, is fifteen; but the one which is held in the highest reverence and esteem, is that of *Ibrahim-el-Khalil* (Abraham the friend), which contains a tank or pool teeming with fish, which are preserved in honour of the patriarch Abraham, this town being the supposed *Ur of the Chaldees*. The manufactures of the town are confined chiefly to articles of the first necessity, principally coarse woollen and cotton cloths. The population is estimated by Mr. Buckingham at 50,000, among whom are about 2000 Christians and 500 Jews, the rest being Mahometans. *Racca*, 85 miles S. by E. of Orfah, also gives name to the same pashalic, and stands on the northern or left bank of the Euphrates, where it receives the waters of the small river *Beles*, or *Belish*, or *Belejish*. Racca is the Greek *Nicephorium*, and was once the favourite residence of the Khalif Haroun-al-Raschid, the ruins of whose palace may still be seen. It is now a very insignificant place, containing only about 30 houses. *Haran*, the place of Abraham's sojourn, before he went into Canaan, and famous in latter times, under the name of *Charræ*, for the defeat of the Triumvir Crassus by the Parthians. At *Jaour-Khouri*, 12 miles east of Orfah, is an immense number of artificial caves regularly arranged, presenting the remains of a subterraneous city. *Nisibin* (*Nisibis*), 120 miles E. of Orfah, and nearly the same distance N.W. of Mosul, was formerly a strong Roman fortress, and the frontier city between the Romans and the Parthians; but only the foundations of its walls remain, the interior being filled with stones and rubbish, and containing a hamlet of some thirty houses. *Dara*, 30 miles W. by S. of Nisibin, is another fortress, now in ruins, whose foundations may be traced more than two miles. *Merdin* or *Mardin*, 60 miles S.E. by S. of Diyarbekr, is the old Roman town of *Mardis*, the walls of which are still in tolerable repair. It consists of about 3000 houses, looking down from its heights of calcareous rocks on the plains below. It used to be reached by a stair more than a mile in length, cut in the rock, at the top of which is the gate, but the stair is now converted into a good road. The site of the town is so elevated, that the Turks say the inhabitants never see a bird flying over their heads.

Along the course of the Euphrates: *Bir*, on the east bank of the river, situate on a steep acclivity, contains between 1800 and 2000 houses, and is 3½ days' journey from Aleppo by caravan, lat. 36° 59′, long. 38° 7′. The stream is here very wide, and so rapid, that often the ferry boats can only cross it in an oblique direction. The inhabitants are Turks, who also extend about 5 or 6 miles down the river, and are described as a peaceable people. The Arab tribes commence about 14 hours below Bir, where there are some ruins called *Bilhah*, on the left bank. About 8 hours below Bir, on the right bank, are the ruins of *Salamia*. *Giabar* is a town of about 1000 houses and tents, 35 hours below Bir, on the left bank, near which there is an abundant supply of bitumen. *El-Der*, supposed to be the ancient *Thapsacus*, on the right bank, contains about 1500 houses. *Karkasia* (*Kirkesion* of the Greeks, *Circesium* of the Latins, *Carchemish* of the Hebrews), at the mouth of the Khabour. *Annah*, 170 miles below Racca, on the right bank, consists of one long, narrow, winding street, running along the narrow space between the river and the high grounds. The town contains two mosques, and about 1800 houses. *Hit*, 33° 43′ N. lat., 42° 27′, E. long., contains about 1500 houses, built round a long hill, which rises parallel to the right bank of the river. The houses are generally one or two storeys high, and flat-roofed; the streets are narrow, dirty, and steep. In the neighbourhood, for miles both above and below, there are numerous springs and streams of salt water and bitumen. *Felujiah*, 140 miles below Hit, is a castle on the left bank, with a floating bridge. At *Musseib*, 70 miles farther down, is also a bridge of boats 160 yards long. *Hillah*, a large well-built town of 10,000 inhabitants, 440 miles below Annah, and 460 from the Persian gulf. About two-thirds of the town are on the right bank, the rest on the left, with a bridge of boats between them, 450 feet long, the depth of water being 18 feet at the lowest season. The bazaars are good, and well supplied with meat, fish, rice, and even luxuries; the city is regularly governed, in general quiet, peaceable, and well disposed towards strangers and Franks. It is surrounded with a good wall, and the governor's house is also fortified. Below Hillah are the towns of *Dewaniyeh*, *Lemlun*, and *Semawah*, the last of which is celebrated for its cotton cloths, which are much esteemed throughout the East.

Hillah is situate within the precincts of *Babylon*, and built with bricks dug from its ruins. A few shapeless mounds are all that now remain of *the glory of the Chaldees' excellency*; the majority of which lie on the left, or east bank of the Euphrates, within five miles north of Hillah; but the most remarkable of all the ruins is on the west side of the river, five miles south of Hillah. This is an oblong hill surmounted by a tower, the circumference of its base measuring exactly 722 yards, and its height to the bottom of the tower 190 feet. The tower itself is a solid mass of the finest kiln-burnt brick-masonry, 35 feet in height, making the total height of the pile 225 feet. Two distinct stages of building are discernible along the sides of the hill; the tower forms apparently part of a third, above which there may have been others, decreasing gradually in their external dimensions so as to give the entire building a pyramidal form. The whole summit and sides are furrowed into deep hollows and channels, strewed with broken bricks, stamped with three, four, six, and seven lines of writing; stones, glass, tiles, large cakes of bitumen, and petrified and vitrified substances. Around it are several mounds and ruins; it is called the *Birs Nimrood*, and is believed by many to be the identical tower of Babel, afterwards converted into the temple of Bel, and destroyed by Xerxes, and which Alexander the Great attempted to restore. But Mr. Ainsworth supposes it to represent the *Borsippa* or *Birsitta* of the Greek and Latin geographers; while Mr. Rich, Major Rennel, and others, suppose the

tower of Babel and temple of Bel to be the ruin now called the Mujelibah, on the east bank of the river, ten miles from the Birs Nimrood.

At some distance west of the Euphrates, in the neighbourhood of Hillah, are situate three places of great historic and religious fame, watered by canals from the river. *Cufa, Kufa*, or *Kufa*, 2½ miles S. of Hillah, from which the letters of the Arabic alphabet have got the name of Cufic, was enlarged, if not built by Omar, who made it the residence of the Khalifs; but after the building of Backdad, it fell into decay. At present there remains little more than the mosque where the Khalif Ali was murdered, a plain building held in peculiar veneration. Ali's burial-place "was concealed from the tyrants of the house of Ommiah, but in the fourth age of the *hegirah*, a tomb, a temple, a city, arose near the ruins of Cufa. Many thousands of the Shiite repose in holy ground at the feet of the vicar of God; and the desert is vivified by the numerous visits of the Persians, who esteem their devotion not less meritorious than the pilgrimage of Mecca."—*Gibbon*, c. l. The city of *Meshed-Ali*, 5 or 6 miles W. from Cufa, is of the size and form of the modern Jerusalem. The tomb of Ali is within a handsome mosque in the centre of the city. All the tyrants of Persia down to Nadir Shah enriched it, says Gibbon, with the spoils of the people. The dome is of copper, with a bright and massy gilding, which glitters in the sun at the distance of many miles. *Meshed-Hussein*, about 30 miles N.W. of Hillah, is built on the spot where Hussein, the eldest son of Ali, and grandson of Mahomet, was killed by the emissaries of the Khalif Yezid, A.D. 680, in the plain of *Kerbela*. The town is larger and more populous than that of Meshid-Ali, and is principally supported by the influx of Persian pilgrims, who come here to worship at the shrine of the martyred Hussein: and whose bodies are brought in great numbers to be buried in so holy a spot. Meshid-Hussein was plundered of all its treasures by the Wahabees; and the reliefs of Meshid-Ali were carried off by the Pasha of Bagdad, to save them from the same fate but were never returned. Below these places, the last town on the Euphrates is *Sok-el-Sheikh* (Lord's market), 70 miles above Korrah, on the south bank of the river, which contains about 20,000 inhabitants, most of whom live in huts without the walls which enclose only a few brick houses. It was built above a century ago by the sheikh of the Montefage Arabs; is the great resort of Bedwins from all parts of the desert; and contains several wealthy merchants, who carry on a great trade.—*Ainsworth*, *Heathcot*, I. *Pell*.

Descending the Tigris from the valley of Diyarbekr, the first place of importance is *Mosul*, a large, ancient, gloomy-looking town in a state of visible decay. It stands on the west bank of the river in lat. 36° 20', long. 43° 6', and contains about 35,000 inhabitants, with the remains of some fine buildings. It carries on some trade, has some unimportant manufactures, and gives name to the well-known article *muslin (mousseline*, cloth of Noul). Exactly opposite, on the east side of the Tigris is the village of *Nunia*, occupying a part of the site of the ancient *Nineveh*; the only remains are mounds of earth, like those of Babylon, which are nearly a mile in circumference, but neither so high nor so perfect. About a day's ride north of Mosul, is the monastery of *Rabban-Hormuzd*, belonging to the Chaldaean Christians, and the residence of their metropolitan; and about a mile nearer the city is the village of *Al Kosh*, the reputed birth-place of the Prophet Nahum, and containing his tomb. *Erbil* or *Arbela* (*Arbil*), 25 miles E. of Mosul, gives its name to the last great battle fought by Alexander the Great with Darius King of Persia. The battle, however, was not fought here, but at *Gaugamela*, nearly midway between Erbil and Mosul. The inhabitants are Kurds and Turks. Erbil would once evidently a very large town, but is now in great decay. It is built on a round flat-topped hill, about 70 feet high, surrounded by a wall enclosing about 1000 houses; and there are about 500 more at the foot of the hill. *Abou Kapri* Golden bridge), 26 miles S. of Erbil, is a small town on an island in the Little Zab river, which is crossed here by two bridges of brick-work; and 24 miles farther south is *Kerkuk* (*Kirkuk, Kirkook*), a large town of 15,000 or 20,000 inhabitants, built partly on a hill like that of Erbil, and partly on the plain below. About 80 miles east of Kerkuk, is *Sulemania* or *Sulemaniya*, or *Suleimaneh*, the principal town of Turkish Kurdistan, situate in a sort of ravine, and containing about 20,000 Moslems, 130 of Jews, 9 of Chaldaean Christians, and 5 of Armenians; 6 khans, 5 baths, and 15 mosques. In winter the cold is sometimes intense, especially when strong easterly winds prevail; in summer, the east wind is hot and relaxing, blowing with prodigious violence sometimes several days in succession. *Kahaf*, at the mouth of the great Zab. *Nimrud*, at the mouth of the little Zab. *Tekrit*, a ruined fort near the mouth of the Tenk. *Deir, Samara, Karghoun*, a resort of pilgrims, and *Baghdad*.

Baghdad stands on the Tigris in N. lat. 33° 20', and E. long. 44° 24'. It is a large, but decayed city, surrounded by an ancient embattled brick wall, about 7 miles in circumference. The city is built entirely of brick, and contains no buildings of either elegance or importance. The river part in stands on the left bank of the river, which is crossed by a bridge of boats, 670 feet long. The desert comes up to the very walls. Baghdad is the capital of an eyalet, which includes all the country from Mosul to Bussorah; it was founded by the Kaliph Mansoor-ibn-Dewanik, in the 13th year of the Hejirah, or A.D. 706, and continued to be the residence of his successors till A.D. 1258, when it was taken, and the Kalifate terminated, by Holagu, the son of Jengis Khan. It came finally into the possession of the Turks, in 1638; and was recently recovered by the Sultan from the control of an almost independent pasha. Three miles north of the city is the mosque of *Camaret*, or *Kazimeyn*, built over the remains of the eleventh of the twelve Imams (see p. 121), and forming one of the handsomest structures in Mesopotamia; and, just without the city walls, on a sloping eminence surrounded by an extensive cemetery, is the tomb of Zobeide, the well-known wife of the Caliph Haroun-al-Raschid. The climate of Baghdad is salubrious, but, in the strictest sense of the word, excessive; the summer's heat reaching 120°, and sometimes even 140° Fahrenheit; and the winter's cold being relieved very low by the icy breezes from the neighbouring mountains. The cold season continues from the middle of December to the middle of February, when the warm weather begins, and gradually increases to the scorching heat of summer. From April till October the inhabitants spend the day in their *serdabs*, or underground apartments, and the nights on the roofs of their houses.

About 20 miles below Baghdad are the ruins of two ancient cities, on the opposite banks of the Tigris. *Seleucia (Selukeia)*, built by Seleucus Nicator, king of Syria, once contained 600,000 souls, and engrossed all the commerce and the wealth of Babylon; but time, violence, and the inundations of the river, have levelled everything. Bricks, tiles, and pottery of every colour, stones, glass, shells, compose what now remains of the once magnificent city. On the opposite, or eastern, bank of the river, are the ruins of *Ctesiphon*, built by the Parthians, within three miles of Seleucia, in order to depopulate and impoverish it. It contains one magnificent monument in a perfect state of preservation; but without an emblem to throw any light upon its history; and with no proof or character to be traced on any brick or wall. This stupendous fragment called *Tauk-Kesra*, is part of the terrace-built bricks, and measures 300 feet along the front or eastern face. It is divided by a high semicircular arch (*tauk*) of 86 feet span, which rises to the height of 103 feet, and is supported by walls 16 feet thick. All round are fragments of walls and masses of brickwork, and vast substructures encumbered with heaps of earth. On account of the vicinity of these two cities, the Arabs have given them the common name of *Al Madain (the two cities.)* Ctesiphon was taken and sacked by the Arabs in A.D. 637, and the plunder obtained was immense. This event was followed by its desertion and gradual decay, and the building of Baghdad finally reduced both of these cities to insignificance.

Kermanshah, Kerrind, Kermah, Carmah, the *Apamea* of the syrian Greeks, stands on the point of land formed by the confluence of the two great rivers. It is a warm and opulent place; but extensive

ruins attest its former importance. On the west bank of the Shat-el-Arab, 48 miles below Kornah, and 86 from the sea, stands Bussrah (*Bussŏrah*, *Basra*, *Basrah*, *Bozra*, *Balsŏra*, *Bassŏrah*, *Busrah*), a large commercial city. The position of the British factory, which is nearly in the centre of the town, has been determined to be in lat. 30° 29′ 30″, long. 47° 34′ 15″. The town is of an irregular oblong square form, surrounded by brick walls 8 or 9 miles in circumference, forming an effectual defence against the Arabs; but of the enclosed space not more than a fourth is occupied by houses, the rest being partly filled by ruins, or partly laid out in corn fields, rice grounds, date groves, and gardens. The walls and most of the houses are built of sun-dried bricks. The population has varied, at different times, from 500,000 to 50,000, of whom about one-half are Arabs, one-fourth Persians, and the other fourth a mixture of Turks, Armenians, Indians, Jews, Catholic Christians, and a few Kurds and Europeans. The situation is so highly favourable for trade, that in spite of every obstacle occasioned by a bad government, and an unsafe passage by land or water, it continues to enjoy a commerce sufficient to enrich many by its profits, and to furnish the means of subsistence to its large population. The ruins of the more ancient *Balsora* are at the distance of 8 miles from the modern city. The country immediately surrounding the city is a desert, with a horizon as level as the sea, and is covered with water for six months in the year. The climate is excessively hot from April till October, but the heat seldom rises above 110° Fahrenheit. On the east bank of the Shat-el-Arab, and on the north side of the Hassar canal, below Bussrah, is *Mohammérah* or *Mohamra*, a small place, where the steam-vessels occasionally stop.

ARABIA.

ASTRONOMICAL POSITION.—Between 12° and 36° N. lat., and 32° and 60° E. long.

BOUNDARIES.—*South-western*:—The Red Sea. *South-eastern and Eastern*:—The Arabian Sea. *North-eastern*:—The Persian Gulf and the river Euphrates. *North-western*:—Syria and Palestine, where, however, the boundaries are not precisely defined.

DIMENSIONS.—From the Isthmus of Suez, in the north-west, to Cape Ras-al-Had in the south-east, Arabia measures 1650 miles; from Suez to the Straits of Bab-el-Mandeb, 1300; from Bab-el-Mandeb to Ras-al-Had, 1250; from Bab-el-Mandeb to Racca, on the Euphrates, 1940; and from Gaza, on the Mediterranean, to the mouth of the Shat-el-Arab, 840. The superficial area is computed at about 834,400 square English miles.

Beled-el-Arab (Arab land), and *Jezirat-el-Arab* (Arab island or peninsula) are the usual native names of the country. The Persians and Turks call it *Arabistan*. The singular word *Arab* is used as a collective noun, to designate the people; but its etymology and meaning are uncertain.

GENERAL ASPECT.—Arabia is a large peninsula, having the greater part of its boundaries washed by the sea and the Euphrates, and occupies the south-western corner of Asia. It appears to be an immense pile of naked mountains and table-lands, encircled by a belt of flat, dry, sandy ground, along the sea coasts.

The north-western portions are mountainous; the triangular peninsula formed by the fork of the Red Sea is very rugged. The ridge of Anti-Libanus, or at least a continuation of it, after skirting the Dead Sea and the Ghor, runs along the coast parallel to the Red Sea, at a distance of from 30 to 80 miles, and sometimes approaches closely to the shore. It increases in elevation as it extends southwards, and appears to be continued in a line parallel to the shore of the Indian Ocean as far as Oman. These mountains diverge into the interior in ridges, which increase in elevation as they recede from the sea; in clear weather they are visible for 60 or 70 miles, and the distant peaks have a rugged pointed outline. Between their bases and the shore extends a lowland border of varying width, called by the Arabs the *tehamah*, which is generally desert and barren, but is cultivated in a few spots. The country to the east and the north of the mountains is higher than the low country along the coast, by so much as two thirds of the height of the mountains, and appears to form an immense table-land or series of elevated deserts, sloping generally towards the Persian Gulf and the Euphrates. No part of Arabia contains rivers or large streams, in the proper sense of the word; though the coast lands are intersected by numerous ravines, called *wadys*, which contain torrents during the rainy season. The dryness of the atmosphere is so great, that it sometimes does not rain for several years in succession. It is only, therefore, those lands which are situate at the foot of hills, and can be watered artificially, that are susceptible of cultivation; and without the help of the wady-torrents, which are intercepted by dams, collected in ponds, and turned from their course upon the land, scarcely any crops could be raised. The peninsula, however, contains many well-watered spots, and wells are interspersed throughout the deserts in numerous oases.

CLIMATE.—Arabia partakes of the climate of northern Africa. The mountains of Yemen are moistened by regular showers from the middle of June till the end of September; but even then the sky is seldom overcast for 24 hours together, and during the rest of the year not a cloud is to be seen. In Oman the rainy season begins in November, and continues till February; but along the south coast it begins in February, and lasts till the middle of April. The air is everywhere generally dry, and always hot; the average temperature of the year is reckoned at 85° Fahrenheit; but during summer, particularly in the low country along the Red Sea, the heat is intense, the thermometer at Mocha rising to 98°. In the hill country of Saana, north-east of Mocha, frost is sometimes, though rarely, felt; and falls of snow take place in the interior, which, however, never lies long. The nature of the winds differs according to the tract they have passed over, so that the same wind is in different places moist or dry. The winds which blow from the deserts are naturally of the latter kind; but it is only in the northern part of the peninsula, in the deserts between the Euphrates and Syria and Mecca, that the much-dreaded *Simoom* or *Samiel* is felt; and even that blows only during the intense summer heats. The Arabs are said to perceive its approach by its sulphureous odour, and by an unusual redness in the direction from which it comes. The only means of escaping from one of these poisonous blasts is to lie flat on the ground till it has passed over; and even the animals instinctively bow their heads, and bury their noses in the ground. The effects of the simoom on those who face it are instant suffocation, and the immediate putrefaction of the body, which is observed to be greatly swollen. In the driest tracts, near the sea, the dews are singularly copious; but the natives nevertheless sleep in the open air; and Niebuhr says that he never slept more soundly than where he found his bed all wet with dew in the morning. At night the stars shine forth with a brilliancy unknown in other regions. In the desert the cold of the night is in proportion to the heat of the day; fevers, notwithstanding, appear to be unknown; and the Bedwin who sleeps in the sand receives additional vigour and vivacity from the purity of the air which he breathes in his slumbers.

GULFS, BAYS, STRAITS.—The *Arabian Gulf* or *Red Sea* is a great inlet of the Indian Ocean, extending in a north-westerly direction between Arabia and Africa, through 18° of latitude, or from 12° 30′ to 30° 10′ N., a distance of 1,400 miles, with a breadth varying from 200 to 120, where undivided. Its northern portion is divided into two smaller gulfs, those of *Suez* and *Akaba*, which are very considerably narrower than the main sea. The Gulf of Suez extends about 200 miles in length, with a breadth varying from 10 miles to 40; the gulf of Akaba is about 100 miles long, but only 7½ wide at its entrance, and has the appearance of a narrow deep ravine, along which the hills rise in some places perpendicularly at the distance of 200 feet from the water. It is exceedingly stormy and dangerous

The Red Sea is full of coral reefs; and with the exception of occasional gaps, through which there are navigable channels, a continued line of these runs parallel to the shore along the whole Arabian side of the gulf. The average width, however, of the clear sea is 100 miles, and the depth almost unfathomable; and within this clear space it may be navigated at all seasons, without impediment from the reefs; only one of which, that of the *Dædalus*, is found within the whole extent. The monsoons, which blow periodically in the Indian Ocean, do not extend to the Red Sea; the wind, however, blows with equal violence from opposite quarters at the two extremities, leaving a considerable space which is subject to light breezes and calms. North-westerly winds prevail throughout the year, in the northern part of the sea; but, during June, July, and August, they attain their greatest strength, occasionally blowing home through the Straits of Bab-el-mandel, to the very limits of the south-west monsoon, and driving the water before them to such an extent, that reefs which are usually covered appear three or four feet above the surface. The duration, however, of such gales, rarely exceeds three or four days, and is usually succeeded by light breezes. In the southern portion southerly winds prevail for nine months of the year; in October, November, and December, they not unfrequently blow home to Suez, also raising the water perceptibly in that direction; but on ordinary occasions, their violence is not perceptible for more than 150 miles above Mokha. The temperature of the atmosphere, compared with that of the Persian gulf, is moderate. The north-west winds are cool and refreshing; but those from the south are damp, sultry, and unwholesome. During the prevalence of the latter in September and October, the humidity of the atmosphere is very great in the warmest days, and the heavy dew at night is particularly disagreeable. In the upper portion of the sea, during the prevalence of northerly breezes, the atmosphere is of uncommon purity, and every object can be perceived the moment it rises above the horizon. In the daytime a cloudless sky throws its deep blue tinge over the sea, which is more clear and pellucid than the tideless Mediterranean, except when the surface is agitated by the tempests which so frequently sweep over it, and raise its waters into snowy-crested waves. The nights are equally pure and clear, and though the coast of Hedjaz is said to be unhealthy, it is not found to be so at sea. The Red Sea communicates with the ocean by the Straits called *Bab-el-mandeb* (Gate of tears), which measure, between the opposite shores, 14½ geographical, or nearly 17 English statute miles across; they are divided by the island of Perim into two portions, of which the eastern is little more than 2 miles wide, and the western, 13. The soundings in the smaller strait vary from 8 to 14 fathoms; but in the middle of the other no bottom can be found with 120 fathoms. This larger strait is, however, divided by the *Jezirat-us-Sibah* or *the Brothers*, a cluster of rocky islets, extending 6 miles east and west, 10 miles south of the most southerly point of Perim. The strait is formed on the Arabian side by *Ras Bab-el-mandeb*, a prominent cape, visible from a ship's deck on a clear day at the distance of 35 miles; its highest peak, *Jebel Manhali*, rises 860 feet, and stands in lat. 12° 41′ 10″, N., long 43° 32′ 14″ E. On the African shore *Ras Sejan*, a gloomy-looking peak 340 feet high, projects northward from the coast, with which it is connected by a swampy piece of lowland 700 yards wide. (*Journal R. Geog. Soc. Lond.* IX. 127.)

Beyond the Strait is the *Gulf of Arabia*, more commonly called the *Gulf of Aden* or the *Gulf of Bab-el-mandel*, which extends east and west nearly 600 miles, with an almost uniform breadth of about 200. On the south coast of Arabia is the large open bay of *Curia-muria* or *Kooriya-mooriya*, with good soundings throughout. The *Gulf of Oman*, formerly called the *Gulf of Ormus*, extends 320 miles from S.E. to N.W., between Arabia and Persia, with a breadth varying from 200 miles at its eastern extremity, to 50 or 60 where its meets the *Persian Gulf*. The latter is a large gulf which penetrates 600 miles into the continent in a north-westerly direction from the Strait of Ormus, with a breadth varying from 230 miles to 130. Along the Arabian shore a great pearl bank extends from *Sharja*, 47 miles S.W. by W. of Ras-el-Khaimah, to *Biddulph's Group*, 400 miles N.N.W. up the gulf, with a breadth of 150 miles. The bottom consists of shelly sand and broken coral, and the depth of water varies from 5 fathoms to 15. The right of fishing for pearls is common to all; the fishery continues from June to September; during the rest of the year the weather is too cold. During the season, every person who can procure a boat, or a share in one, is employed. The boats are of various sizes and forms, averaging from 10 to 50 tons; Bahrein is computed to furnish of all sizes 3500; the Persian coast, 100; and the coast between Bahrein and the entrance of the gulf, 700. The annual value of the pearls obtained is estimated at £100,000 sterling; and the number of people employed is about 30,000. The heat of the atmosphere in the Persian Gulf is not surpassed by that of any other place in the world; the nights being short, neither land nor sea has time to cool; even the heat of the sun when on the horizon is sufficiently great to be disagreeable; the sailors say it rises red hot. From sunrise till about an hour before noon, when the sea-breeze sets in, the heat is almost intolerable.—(*Wellsted.*) The Persian Gulf receives at its northern extremity the waters of the great rivers Euphrates, Tigris, Jerahi, and others.

CAPES.—*Ras Mohammed*, a low promontory, forms the southern extremity of the triangular peninsula of Mount Sinai. *Ras Bab-el-mandeb*, the south-western point of Arabia. *Ras-al-had* (Flat Cape), a sandy point at the south-eastern extremity of Arabia. *Ras Muscndon*, an insulated rocky point at the entrance of the Persian Gulf, is separatad from the mainland by a very deep channel not more than 400 yards wide. *Ras Reccan*, the most northern point of a peninsula which projects about 100 miles into the Persian Gulf, on its south side.

ISLANDS.—In the Red Sea are: *Graa* or *Jezirat Pharoun*, named also by the Arabs *Kalat-el-dier*, is a small islet at the head or northern extremity of the Gulf of Akaba, consisting of two rounded hillocks joined by a flat isthmus, the whole being encompassed by a massive wall, with square towers at the angles. The island was noted in the wars of the crusaders.—(*Wellsted, Laborne.*) *Tehrum* or *Tiran*, a hilly island with a high peak, is destitute of water, and inhabited only by a few fishermen. It was anciently sacred to Isis, and is one of a group which lies opposite the mouth of the Gulf of Akaba. *Jebel Teir*, a pyramidal islet, 6 miles in circumference, is 1300 feet high, and inhabited by a few fishermen. N. lat. 15½°. *Jebel Zigger* (the isle of prayer), sterile and uninhabited rocks of volcanic formation. *Sabaquien Islands*, fourteen barren rocks, pyramidal and volcanic, to the south of Jebel Teir. *Sughair* and *Harnish*, two large islands in a group called the *Arrow Islands*, 14° N. lat. *Perim* or *Meyun*, a small rocky island which divides the strait of Bab-el-mandeb. *Camaran* or *Kamaran*, a large island near the coast, south of Loheia, which is used as a depot for coals to supply the steam-vessels. *Abdul-Kudir* or *Palinurus Shoal*, a dangerous patch, discovered by the H.E.I.C.'s ship Palinurus, in 1835, 8½ miles off shore, 14° 54′ 50″ N. lat., 50° 45′ 20″ E. long. E. by N. of Makulla.

Bahrein, *Baharein*, or *Aval*, a large island in the middle of a bay on the southern shore of the Persian Gulf, measures 27½ miles long, and 10 broad; the middle of its breadth is occupied by a range of hills, but its shores are very low, and surrounded with shoals, most of which are dry at low water. It is very fertile, and covered with plantations of date trees; it has also numerous springs of excellent water in the interior, but none near enough the harbour to be available for shipping, which are supplied from the bottom of the sea, 18 feet deep, where there is a spring of good fresh water. The chief town, named *Manama*, is a large and populous place at the northern end of the island, in 26° 14′ N. lat., 50° 36′ E. long., with about 40,000 inhabitants. The houses are well-built, and the town altogether is more respectable than any other in the Persian Gulf. The bazaar is well supplied with fine cattle, sheep, poultry, fish, and vegetables; an extensive trade is carried on with all the tribes along the

coast, in which upwards of 140 vessels are employed. But the principal source of its prosperity is the pearl fishery. The harbour is formed on the east side by the island of *Arad*, which is very low, and is nearly divided by the sea at high water, though the tide rises only seven feet. It contains the town of *Maharag*, about a mile east of Manama, but not nearly so populous. On the west side of Bahrein, is another small island, named *Jelel Hussein*, which is low and uninhabited. The group is surrounded by shoals and flats, one of which, named *Teignmouth Shoal*, extends 15 miles to the northward, with a breadth of 14 miles, and is in many parts dry at low water. The bay which contains these islands, extends 70 miles inland, between Ras Reccan and Ras Tanhora, but is so completely filled with shoals as to be quite unnavigable for ships of burden.

MINERALS, VEGETABLE PRODUCTIONS, AND ANIMALS.—According to Niebuhr, Arabia contains no mines of gold or silver, though the latter metal is found in small quantities among the lead of Oman. Iron mines exist in the north of Yemen. Rock salt is wrought near Loheia, and several other places; the beds of the Red Sea and the Persian Gulf abound with coral, and on the southern shore of the latter is the great pearl bank of Bahrein. The country is rich in indigenous trees, as the Indian fig tree, the date tree, which produces the staple article of food to the desert tribes; the cocoa palm, the fan palm, and other sorts of palms and fig trees; the corneil tree, the plantain or banana, the almond, the apricot, the pear, the apple, the quince, the orange, the acacia, which produces gum-arabic, the mangoustan, the papaya, the sensitive plant and other mimosas, the balsam tree, and the tamarind. There is, however, in the country, little timber fit for building, the wood being mostly of a light porous texture. Among the shrubs may be mentioned the coffee-plant, the indigo shrub, the castor-oil plant, the senna, aloe, styrax, sesamum, cotton, sugar-cane, betel, nutmeg, all sorts of melons and pumpkins, the *wars*, which yields a yellow dye, the *fouw*, which supplies a red dye, and a great variety of leguminous plants, pot-herbs, and officinal herbs. Among the odoriferous plants are lavender, marjoram, the white lily, the globe amaranth, the sea daffodil, various kinds of pinks, and other plants. Wheat, turkey-corn, and dhourra, abound in the plains of Yemen and other fertile districts; also barley, with which the Arabs feed their horses, and beans, which serve as food for their asses. Manna, answering precisely to the description given by Moses of the food of the Israelites, is produced abundantly from a little thorny shrub, in all the deserts. Arabia is distinguished for her breed of horses, the character of which is, that they are spirited, active, and of the most generous temper. Perhaps, it has been said, the genuine Arabian steed is the most compact piece of powerful and efficient mechanism in the brute creation; but the horses are generally of small size, and in no way remarkable for beauty. The Arabs pay the utmost attention to the genealogy and education of this faithful friend, which indeed is brought up as one of the family; the colts live in the tents among the children, and are treated with a familiarity and tenderness which produce gentleness and attachment. They are accustomed, says Gibbon, only to walk and to gallop; their sensations are not blunted by the incessant abuse of the spur and the whip; their powers are reserved for the moments of flight and pursuit; but no sooner do they feel the touch of the hand or the stirrup, than they dart away with the swiftness of the wind; and, if their friend be dismounted in the rapid career, they instantly stop till he has recovered his seat. There are two distinct breeds of horses: the one called *kadish* (of unknown descent), is in no higher estimation than the common horses of Europe, and is employed to carry loads, or for draught; the other breed, called *kohelli* or *kohlani* (of ancient and noble pedigree), is reserved for riding only. The best horses are bred in the Syrian deserts; they are valued more for their attachment and their amazing speed, than for their beauty. And yet the horses of Abdallah, the chief of the Wahabees, which were captured by the Turks, along with their master, and could not have been purchased at any price, are said to have had eyes and bones like those of the gazelle, the latter indeed delicate, but firm as steel. Nothing can be compared to the beauty and the gracefulness of all their motions, and none of the Turkish horses at all approach them in agility and swiftness. Horses, however, are not very numerous; the comparative scarcity of vegetable substances for their food is an insurmountable obstacle to the extensive breeding and rearing of this animal; and in some places there are many encampments without a single horse. The tribes richest in horses are those on the borders of Syria and Mesopotamia; while, on the contrary, the tribes in the southern parts of the peninsula have very few. Like their masters, the Arab horses live all the year in the open air. Next to the horse in importance is the camel, the faithful slave of the Arabs, which serves them as a beast of burden across their deserts, while its milk supplies them with the most nourishing part of their food, its hair with coverings for their tents, and its flesh with a dainty morsel on their holidays. The camels of Arabia are of the one-humped species; those of them that were trained for riding were denominated by the Greeks, from whom we have borrowed the term, dromedaries (racers), some of which are exceedingly swift; the modern dromedaries seem to be a peculiar variety of the species, generally of a lighter form than the beast of burden. The other animals found in Arabia are asses, some of which are large, and so spirited, that it has become a proverb to say of a person of great vivacity that he is as brisk as an ass. Oxen and cows with a hump, rock goats, gazelles, sheep with broad thick tails, hyenas, panthers, ounces, jackals, wolves, foxes, wild boars, hares, jerboas, and monkeys. Among the birds are eagles, falcons, sparrow-hawks, vultures, ostriches, lapwings, thrushes, pheasants, guinea-fowl, pigeons, partridges, larks, quails, plovers, and storks. Domestic poultry are very plentiful in all the fertile districts. Pelicans and other sea fowls are numerous on the coasts, which all abound with fish. There are also various kinds of serpents, lizards, and ants; and the formidable locusts are produced in myriads in the deserts. These last the Arabs dry, and roast or boil them for food; and Niebuhr states that in his time they were strung on threads, and offered for sale in the markets of all the Arab towns, from Bab-el-mandeb to Bus-rah. The practice is still continued; the mukin or red species is the fattest, and, when fried and sprinkled with salt, is considered a wholesome and nutritious food.

PEOPLE.—The Arabs are of the Caucasian, or white race of mankind, and speak various dialects of the Semitic language, which are all classed under the general name of Arabic. Their language is celebrated for its beauty and extraordinary copiousness. The people are Mahometans of the Soonee sect, excepting perhaps a few remaining Wahabees; and are all divided into the three classes of Bedwins,* husbandmen, and citizens. The modes of life of the two latter classes are not essentially different from those of people of the same classes in other countries; it is principally the Bedwins that exhibit the peculiarities of the Arab character. The stationary Arabs are somewhat above the average stature; they are robust and well formed; their skin is sun-burnt and brown, but elastic; their face is oval and copper coloured; their forehead high and broad; their eyebrows black and bushy; the eyes black, deep-seated, and quick; the nose straight, and of medium size; the mouth well defined; the teeth well set, beautiful, and white as ivory; the ear beautifully formed, and of the normal size, slightly curved forwards. In the women, the graceful outline of the limbs is especially admirable; and also the regular proportions of the hands and feet, and the elegance of their

* This word is usually spelled *Bedouins*; but as that is the French form, we have preferred the English *Bedwin*, which is nearly the same in sound, though different in spelling. The term is a corruption of the Arabic *badui*, which means an inhabitant of the desert, and is derived from the noun *badw*, an open country, a desert.

attitudes, steps, &c. The Bedwins are generally divided into tribes, which are scattered upon the confines of the cultivated regions, and along the edges or on the islands of the deserts; they live under tents, which they transport from place to place. They have generally a very strong resemblance to the settled Arabs; but their eyes are more sparkling, their features less distinct, and their stature somewhat inferior. They are also more agile; and, though slightly built, they are very strong; have lively imaginations; are haughty and independent in character; and are suspicious, dissembling, and restless, but brave and intrepid. They most religiously observe the rights of hospitality; and are especially remarkable for their profound address, and for their great intelligence. They are regarded as excellent horsemen; and they boast, not without reason, of their skill in the use of the lance and the javelin. They are also very skilful as tradesmen and artizans. The manners and customs of both classes are, however, in most respects very nearly the same. They rear sheep, camels, and horses; all speak dialects of the same language, and profess the same religion, Islam. Their mode of living is nearly the same; their food consists principally of milk, eggs, and vegetables; they eat but seldom, and consume little flesh; and in general they are very sober and temperate in drinking; and easily support all kinds of privation. The men all shave the head and allow the beard to grow; the women allow the hair to grow, and often colour it and their eyebrows with paint more or less of a deep brown, which strengthens the hair and imparts to it a beautiful black hue. They also dye with a liquor of a golden yellow colour, procured from the henna plant, the edges of the feet and hands, reaching to the points of the toes and fingers. These parts, and also the faces of the youth of the higher classes, are protected from the disfiguring effects of the small pox by means of gold leaf, which is applied at the invasion of the malady. (*Remarks on the Physical Constitution of the Arabians. By M. Larrey. Edin. New Phil. Journal* XXV. 318.) The life of a Bedwin is one continued round of idleness or amusement. When no pastime calls him abroad, he loiters in his tent, smokes his pipe, or stretches himself under the shade of a tree. He has no relish for domestic pleasures, and seldom converses with his wife and children; he values nothing so much as his horse, which he makes use of in hunting and plundering expeditions, to which the race have been addicted in all ages. The Bedwins are divided into numerous tribes, which have constant feuds with each other; and, even when they are at peace with their neighbours, they cannot rest at home, but make incursions upon distant tribes, and upon all the more civilized people who possess anything to tempt their cupidity. They are, in short, the children of nature, and exhibit a strange combination of virtues and vices. They are certainly now very much improved from their ancient condition, such as it is described in Antar, and which is very well exhibited in the speech of the Arab ambassadors sent to Yezdegird, the last Sassanian king of Persia, to require his submission to their prophet. "Their food was green lizards; they buried their infant daughters alive; nay, some of them feasted on dead carcasses and drank blood; while others slew their relations, and thought themselves great and valiant, when by such an act they became possessed of more property; they were clothed with hair garments, knew not good from evil, and made no distinction between what is lawful and what is unlawful." From this state they were raised by the religion of Mahomet; and whatever improvement their manners and customs have undergone must in fairness be ascribed to the new impulse given to their minds by that fanaticism wherewith he inspired them; to the union which he and his successors established among them, by giving them a common religion; and to the continued influence of that religion, which is pure in comparison with the idolatry by which the whole country was polluted before his time. The Arabs have been distinguished in all ages for their national independence; they have never formed part of any of the great empires; their country has never been overrun by any of those migratory hordes of Scythians, Turks, and Tartars, who have at different periods invaded and overspread all the other southern countries of Asia, overturning the existing governments, and founding new dynasties. This independence is easily accounted for; the Arabian deserts cannot easily be crossed by large bodies of men, and they contain nothing to tempt an invader. All that Arabia possesses to allure the cupidity of conquerors is to be found only in Yemen, and this province, accordingly, has been conquered and possessed by foreigners, who made their approach by the Red Sea. It is only the desert, therefore, that has maintained the much-vaunted independence of Arabia; and there everything contributes to preserve the natives from subjection. The Arabs are likewise famed for their hospitality to strangers; their generosity has also been much praised, as well as their fidelity; but they are, in fact, a nation of robbers; and late travellers, who have studied their character, declare that all the tribes, with very rare exceptions, regulate their fidelity only by their interests. They are all addicted to war, bloodshed, and cruelty, and never forget or forgive an injury. The houses in Arab towns, even when built of stone, are entirely destitute of taste; the men's apartments are in front, those of the women behind. Even the Bedwin divides his tent into two apartments by a curtain, behind which the women are concealed. In respect of personal cleanliness, they are said to observe the precepts of their religion with the most rigorous exactness. Their dress is loose, long, and flowing, wrapt round them and girded with a sash; some, however, go almost naked in hot weather, others wear drawers and slippers, but no stockings. In some parts the women wear large veils, with rings, bracelets, and necklaces, have their nails stained red, their feet and hands of a yellowish brown with an herb called *henna*, their eye-lashes darkened with antimony, and use every art to make the eyebrows large and black.

Some of the Arabs boast of their descent from Ishmael the son of Abraham; they are not, however, Ishmaelites. According to their own traditions they are sprung from two stocks, *Kahtan* or *Joktan*, the son of Heber, of the family of Shem, and *Adnan*, the lineal descendant of Ishmael. The posterity of the former they call pure Arabs, that of the latter, mixed Arabs. The Kahtanians settled in the east and south of the peninsula, while the Ishmaelites seem to have taken possession of the north-west, along the borders of Egypt, Palestine, and Syria. Their early history is very obscure: it was only after the time of Mahomet that they acquired what may be called an historical character; for, under his successors in the civil and ecclesiastical sovereignty which he founded, the Arabs burst from their deserts like a torrent, and made themselves masters of Syria, Assyria, Persia, Egypt, North Africa, and Spain. Their sovereigns, who took the title of caliph or khalif, transferred the seat of government to Damascus, and Kufa, and latterly to Baghdad on the Tigris; and the Arabs, who followed their chief into the cities and fertile countries subject to his dominion, became a very polished people, and carried the pursuits of literature and philosophy to a high degree of excellence, while Europe was buried in the darkness of the middle ages. As the caliphate declined, the natives of the peninsula relapsed into their former state of wild independence, in which they continue at the present day.

GOVERNMENT AND PRODUCTIVE INDUSTRY. — The nature of the country keeps the Arabs divided into petty tribes, and nowhere admits of large bodies being consolidated into powerful states, and thereby acquiring a supremacy over the whole nation, and founding such a monarchical despotism as has always prevailed in the more fertile and populous countries of Asia. The Arab governments are accordingly of the simplest kind, and their princes have very limited powers. The prevailing principle of their government is patriarchal, where the hereditary chief of the tribe is the real or reputed descendant of their common ancestor. The chiefs, who are called Sheikhs, and the more powerful of them, Emirs, lead the tribe to war, administer justice, and decree peace and war, but seldom without the advice of the elders of the tribe. The Sheikhs, however, though the princes of in-

dependent communities, are in no respect to be compared with the European kings; for their whole mode of life is distinguished by the utmost simplicity, and they live on the most familiar terms with all their subjects. From the principle inherent in the nature of man to abuse the power with which he is invested, some of these sheikhs occasionally conduct themselves very despotically; but in such cases their impatient subjects make no scruple to depose them, and elect others in their stead, a practice which operates as a salutary check upon their despotic inclinations. The governments of the desert tribes are all of this description; but, among the settled inhabitants of the cultivated districts, very despotic princes are to be found, those of the north-west, and along the coasts of the Red Sea, have been subjected to the vigorous and despotic rule of the Pasha of Egypt and his deputies; and the Arabs in Mesopotamia and Syria also acknowledge the sovereignty of the Sultan and his pashas, but pay very little obedience to their orders when they attempt to command. There is scarcely any such thing as manufacturing industry, excepting only the commonest articles and fabrics for home consumption. But in agriculture the settled Arabs are very industrious, particularly in turning to account the scanty streams of water. In Yemen, the contrivances for this purpose are elaborate and extensive. Terraces are formed, and dams to retain the water, which is also raised from wells to irrigate the fields. In harvest the crop is pulled up by the roots, and the hay is cut down with a sickle. The commerce of the country, though much less than it was before the discovery of the passage to India by the Cape of Good Hope, is still somewhat considerable, and is carried on chiefly by the caravans which yearly arrive at Mecca from all parts of the Mahometan world. The articles of necessary use are furnished by India, those of luxury by Europe, and military arms by Persia and Ottoman Asia. The principal exports are coffee, the most important of all; pearls, dried dates, skins, horses, senna leaves, indigo, gums of various kinds, the produce of Arabia; besides benzoin, incense, and myrrh, which are brought from Africa, though they pass in commerce for the productions of Arabia. The principal articles of import, besides the three already mentioned, are stuffs, sugar, and other produce of India, steel, iron, cannons, lead, tin, cochineal, cloth, false pearls, arms, and many other productions of European industry and skill.

The well-known division of Arabia, made by the Greek and Roman geographers, was into three parts: *Petræa*,* *Felix* (Greek *Eudaimon*, *Happy*), and *Deserta* (*Desert*). Petræa comprised the region between Judæa and the Red Sea, and was so called from its chief town Petra, the capital of the Nabatheans. The Happy, or fortunate Arabia, comprised the south-western regions, and appears to have been so called on account of its producing, or being supposed to produce the so much coveted drugs and spices of the East. The Desert Arabia comprised all the central, eastern, and northern parts of the peninsula. But these distinctions were never known to the Arabs themselves; nor are the native writers agreed as to the proper divisions of their country; in fact, as Arabia never formed one kingdom, the division into provinces is unknown, and the boundaries of the possessions of tribes being always fluctuating, and never at any time well defined, they cannot be assumed as civil divisions. Geographers are accordingly very much at a loss to know how to divide Arabia. No two of them are agreed as to the number or the names of the provinces; but as it appears that the Arabs do attach certain names to certain ill-defined portions of their country, we shall consider it as so divided, according to the best information we can obtain. The divisions are, 1. HEDJAZ, comprising the Petræan Arabia, and all the east coast of the Red Sea to the frontiers of Yemen. It thus includes the *Beled-l-Haram*, or Holy Land of Arabia. 2. YEMEN, comprising the south-west parts of the peninsula, including *Tehama*, or the low country on the Red Sea, and *Hadramaut*; or in other words, the whole of the low country along the Red Sea and the ocean, to the south of the 15th or 20th parallels of latitude. It comprises the Imamat of *Sanaa* or Yemen proper; the state of *Aboo-Arish*, between Mecca and Yemen; the countries of *Asheir* or *Hashid-wel-Bekil*, between Sanaa and Nedjed, inhabited by several warlike tribes, who form a kind of confederation, and furnish mercenary soldiers; the country of *Aden*, at the south-west extremity of the peninsula; and *Hadramaut*, which extends along the ocean to the east of Sanaa. 3. OMAN comprises the eastern angle of the peninsula, but its inland districts are very little known. 4. LACHSA or HESSE, extends to the north-west of Oman, along the south coast of the Persian Gulf, nearly as far as the Euphrates, and is divided into several small states; the population on the coast live principally by fishing and piracy. It includes also *Bahrein*, a group of islands in a bay of the Persian Gulf, celebrated as the chief seat of the pearl fishery. 5. THE BADIA or BAN-ARAB, the interior of Arabia, comprises two principal divisions: *Nejed*, which includes all the inland deserts, from Yemen and Oman, in the south, to the head of the Persian Gulf and the Red Sea; and the *Syrian desert*, which extends from the Euphrates to the borders of Syria and Palestine.

§ *Cities, Towns, and Remarkable Places.*

MECCA (Mekka or Bekka), N. lat. 21° 30', E. long. 40° 2', is situate in the Holy Land of Arabia, in a barren valley, surrounded by mountains, two days' journey from Jiddah on the Red Sea. It is celebrated as the birth-place of Mahomet, and the cradle of the Mussulman traditions. The Arabs believe that it was at Mecca that Adam and Eve, after their fall, obtained pardon of God. It was here, also, that Ishmael and his mother took refuge, after being driven from Abraham's house by the jealousy of Sarah, and founded the illustrious tribe of the Koreish, from which Mahomet was sprung. Abraham, they also allege, visited Ishmael several times at Mecca, and built the Kaaba, which has been ever since the object of religious veneration. Mecca may be styled a handsome town; its streets are generally broader than those of eastern cities; the houses are lofty, and built of stone; and the numerous windows which face the streets give them a lively and European aspect. The city is open on every side. No trees or gardens cheer the eye; and except four or five large houses belonging to the sheriff, two medreses or colleges, and the great mosque, with some buildings and schools attached to it, Mecca has no public buildings to boast of. Neither khans, nor palaces, nor mosques, which adorn other towns of the East, are here to be seen. The streets are unpaved, filled with dust in the dry season, and with mud during the rains. There are few cisterns for collecting rain, and the well-water is brackish; the best water is brought by a stone conduit from the vicinity of Arafat, six or seven hours distant. But Mecca possesses the *Beitullah* (house of God), the grand centre of the Mahometan world, which forms an oblong square, nearly in the middle of the town, 250 paces long, by 200 broad, and surrounded by a covered colonnade. The centre is occupied by the *Kaaba* or holy house, an oblong massive structure of rough stone, 18 paces in length, 14 in breadth, and from 35 to 40 feet in height, and entirely rebuilt, as it now stands, in A.D. 1627, after it had been nearly reduced to ruins by a torrent. At the north-east corner is a black stone, which appears to be a piece of lava, or black basalt, fixed in the wall, and is devoutly kissed by every pilgrim. The four sides of the Kaaba are covered with a black silk cloth which hangs down, and leaves the roof bare. This

* A vulgar error was long prevalent with respect to this word, which was supposed to be the common Greek word *petraia* (stony), and the province was accordingly supposed to have been so called on account of its very rugged, rocky, or stony nature. But in this respect it is not more stony than many other parts of the peninsula, and, historically considered, there is no reason to doubt the correct derivation of the word to be from *Petra*, the proper name of the city.

curtain or veil, called *kesoua*, is renewed annually at the time of the hadje, being brought from Cairo, where it is wrought at the expense of the Ottoman Sultan. Within the square is also the well *Zemzem*, and several other holy spots. The Meccawys are an idle and dissolute race, who, with great professions of sanctity, openly set at defiance all the moral precepts of their religion. Many of them even neglect its very forms, and, like the Bedwins, never pray at all, thinking it quite sufficient to ensure salvation that they have been born at Mecca. Their principal support is derived from the pilgrims, to whom they let their houses, and whom they supply with necessaries. Their number at one time amounted to so many as 100,000; but, after the invasion of the Wahabees, it was reduced to about 18,000. It is probably now very considerably increased. Mahomet having enjoined upon his followers that they should visit Mecca at least once in their lives, a great concourse of pilgrims takes place every year in this holy city, and, notwithstanding the decrease of religious zeal, and the increased expense of the journey, so many as 120,000 attended the hadje or festival in November 1831. —(*Lieut. Wellsted, Journal R. Geog. Soc. Lond.*, VI. 89.) After the downfall of the Caliphate, Mecca became an independent state under its own sovereign called Sheriff, but it is now a dependency of Turkey. In the neighbourhood are several holy places, which are visited by the pilgrims; as *Mount Arafat*, six hours' journey on foot east *the valley of Mina*, and the *mountain of Hira*, which contains the cave to which Mahomet was accustomed to retire for meditation on heavenly things, and where he reported that the angel Gabriel appeared to him for the first time. *Jiddah*, the port of Mecca, 55 miles west on the Red Sea, 21° 28′ 30″ N. lat., is a well-built town, on a slope which rises gradually from the sea, surrounded with a wall 3000 paces in circuit, but in the midst of a desert; there being within the town no gardens or vegetation of any kind, excepting a few date-trees near one of the mosques; and, even on the outside of the town, the whole country is a barren desert, covered on the sea-shore with a saline earth, and higher up with sand. The people are almost exclusively foreigners, and are engaged in commerce. Their number has been variously estimated at from 5000 to 40,000. The streets are airy, the houses lofty, and well built of coral. About 70 miles east of Mecca is *Taif* or *Taief*, a small town in the midst of a sandy plain, surrounded by hills, which is supplied with water from two copious wells, and celebrated all over Arabia for its beautiful gardens.

MEDINA, about 250 miles N. by W. of Mecca, situate in a low plain close to the mountains which run parallel with the Red Sea, is a small town surrounded by a good wall, which has always made it be considered as the principal fortress of the Hedjaz. It was formerly called *Yathreb*, and received its present name of *Medinat-al-nebi* (prophet's-town), from the circumstance of its having become the residence of Mahomet after his flight from Mecca, and of his burial. Without the town are extensive suburbs. The great object of attraction is the mosque which contains the tomb of Mahomet; it is smaller than the beitullah of Mecca, but built on a similar plan, forming an open square, surrounded with colonnades, and having a small building in the centre. Near the south-east corner stands the famous tombs, wherein are deposited the remains of Mahomet, and the first two caliphs, Abubekr and Omar. In the neighbourhood of the city are *Mount Ohud*, where the prophet suffered a bloody defeat from the Meccawys; and the *wells of Yeder*, where he gained his first victory over them. *Yambo*, a small town on the Red Sea, with a capacious harbour, the best on the coast, is considered the port of Medina, from which it is distant about 100 miles S.W. It is situate on a low sandy spot, which is utterly destitute of vegetation. The population is very fluctuating, but is estimated by Lieutenant Wellstead at 2000. No ships resort to the harbour, and its trade is carried on by boats. Lat. 24° 3′ 35″ N.

In that portion of the Hedjaz which corresponds with the ancient Arabia Petræa, are several places of remarkable interest. *Petra*, the ancient capital of the Nabatheans, is now deserted, but its site still exhibits many splendid remains of the architectural taste and the wealth of its inhabitants. It is situate in a small valley, called *Wady Mousa*, surrounded with precipices, about 64 miles from the head of the Gulf of Akaba. A little to the north-west is *Mount Hor*, where Aaron was buried, and where there is now a mosque containing his tomb. Mount *Sinai* and Mount *Horeb*, or *Jebel Katerin*, and *Jebel Mousa*, are situate in the southern part of the triangular peninsula formed by the forks or branches of the Red Sea, in a gloomy wilderness, consisting of long ranges of rugged rocks, intersected by deep valleys, at the bottoms of which are found the only traces of verdure. Sinai or *Jebel Katerin* is ascended by a very steep route, which formerly consisted of about 15,000 steps, said to have been made by the Empress Helena. At the foot of the mountain is the convent of St. Katherine, fortified like a castle, and inhabited by about thirty Greek monks, which contains also a very ancient church, and a mosque as old as the first century of the Hejrah. *Jebel Mousa*, the mountain supposed to be the *Horeb* of Moses, stands a little to the westward of Sinai, but is neither so high nor so ruged. The view from the top of Sinai exhibits "a perfect sea of desolation." The elevation exceeds 8000 feet above the level of the sea; but the only place from which it is visible from seaward is at a point on the west shore of the Gulf of Akaba, about 18 miles N. of Ras Mahommed. It is doubtful, however, whether or not these mountains be the Sinai and Horeb of Moses: there being another hill in the neighbourhood, which, in the opinion of some travellers, better accords with the history; and the honour is also ascribed to *Jebel Serbal*, a mountain considerably to the north-west. On the west coast of the peninsula is the small seaport town of *Tor;* about eight miles from which, on the sea shore, is the *Jebel Narcono* or *Sounding Mountain*. A solid slope of the finest sand extends from the base to the top of the mountain, a height of 600 feet, at an angle of about 40° with the horizon, and is encircled by a ridge of sandstone rocks rising to a pointed pinnacle, and presenting little surface adapted for forming an echo. When sand is rolled down it produces a sound commencing in a strain like the first faint notes of an Eolian harp, or of the fingers wetted and drawn over glass, and increasing in loudness as it descends, till at the bottom it becomes almost equal to thunder. *Akaba*, a Turkish castle at the head of the gulf to which it gives its name, is supposed to be near the site of the ancient *Eloth* and *Ezion-geber*, from which the fleets of Solomon sailed to Ophir. It communicates directly with the Dead Sea by the long narrow valley *El Arabah*, which was for some time supposed to have been traversed by the river Jordan before the catastrophe of Sodom and Gomorrah; but is now found to be so much higher than the valley of the Jordan as to render that supposition impossible. Wady Araba joins Wady Ghor about 12 miles south of the Dead Sea, forming there a long narrow valley or ravine 250 to 300 yards wide, which is filled with tamarisks. It widens as it extends southward; and from 30° 15′ N. lat. slopes to the Red Sea, forming what is properly called the *Akaba* or ascent. To the north-east of Petra are *Karek* or *Caruck*, and *Shobek* or *Montreal*, places distinguished in the wars of the crusades; Karek is still a considerable town of 550 families. Between Akaba and Suez is the desert *El Tyh*, or, as the Arabs call it, *Tyh-beni-Israel*, the desert of the Israelites, a desolate tract covered with black stones, which Burckhardt describes as the most dreary and barren wilderness he had ever seen.

In Yemen: Saana, the capital of the Imamat of Saana, one of the most powerful states of Arabia, stands in the middle of a beautiful valley 4000 feet above the level of the sea, and is a well-built town, surrounded with brick walls and towers. It is supposed to contain 40,000 inhabitants, who carry on a great trade, chiefly in coffee, and some of its merchants are reputed to be very wealthy. It is the seat of a dynasty of Imams, which dates from the year 1626, when the Turks were expelled from Yemen. The Imam has two large palaces, with extensive gardens walled round and fortified. The city also contains 20 mosques, many of which are splendid, with richly gilt domes. There are three other towns in the valley, *Bedak*, *Wady-Dhar*, and *Jeraf*, containing altogether about 30,000 inhabitants;

lat. 15° 21′ N., long. 44° 21′ E. *Mocha* or *Mokha*, 160 miles S.W. of Sanaa, a decayed town with 900 houses, on the flat sandy shore of the Red Sea, with an open roadstead, was formerly the principal sea-port of Yemen, and the place from which the coffee was exported. *Zebid*, 60 miles N. of Mocha, is a small gloomy city with 7000 inhabitants, and a garrison of 700 men. *Beit-el-fakih*, 93 miles N. of Mocha, a large unwalled town of 8000 inhabitants, is the frontier town of the Egyptian or Turkish government, and has a citadel of some strength. It is the emporium of all the coffee from the interior, and is reckoned the hottest town in the Tehamah. *Aden*, on the coast of the Indian Ocean, east from Bab-el-Mandeb, was once a great emporium of commerce, and has an excellent harbour; but its trade has been lost, and the town has been reduced to a heap of ruins; it contains a population of about 600 Jews, Banians, Arabs, and Somaulies. It is built on a small flat, probably the bottom of a crater, surrounded by precipitous rocks, on the east side of a peninsula formed by two fine bays, in the one of which, opposite the town, is the fortified island of *Sirah*, which commands the approach. The peninsula consists chiefly of a mass of volcanic rocks, of the most rugged and fantastic forms, extending five miles east and west and three broad, and having as its most southern point, *Ras Sanailah* or *Cape Aden*, in lat. 12° 45′ 10″ N., long. 45° 9′ E. The highest part of the peninsula is *Jebl Shamshan*, a rocky promontory of limestone, rising 1776 feet above the level of the sea. The peninsula bears a strong resemblance to the rock of Gibraltar, and could easily be rendered as impregnable; but its rocky masses are higher and more peaked in their outline. It is connected with the mainland by a neck of flat sandy ground only a few feet high. But both the peninsula and the mainland present the most desolate aspect; not a tree or a shrub is to be seen; and the heat is intolerable. On 5th June 1839, at six in the evening, the thermometer stood at 100° in a stone house; the place, however, is healthy. Aden has been taken possession of by the British Indian Government; the population is already increasing, and the town promises to become again as great a seat of trade as it was in the 13th century, when it contained 30,000 inhabitants. The neighbouring country abounds with honey and wax of the finest quality. *Makullah* or *Mukullah*, 300 miles E. of Aden, in 14° 31′ N lat. and 49° 13′ E. long., a sea-port town on a low projecting point under the face of a precipitous hill, is the principal trading place on the south coast of Arabia, and has a population of 4000 to 5000. Many of the houses are lofty and substantial. *Sihun*, the capital of Hadramaut is situate 160 miles distant from Makullah. *Loheia*, a town on the Red Sea, is situate in a poor country, with a shallow harbour and bad water; but exports a good deal of coffee. *Hodeida*, a town of considerable size on a sandy bay of the Red Sea, where ships are well protected. The neighbouring country is flat and sandy, and chiefly produces dates; but from the mountains, which are visible from the coast, at the distance of two days' journey, grapes, coffee, limes, and other vegetable productions are brought to the market. *Gomfodah* or *Comfodah*, is a port on the Red Sea. *Dafar* or *Zafar*, a town of Hadramaut, on the ocean, in the district of Shih-hir or Seger.

In Oman: Muskat, *Maskat*, or *Muscat*, a large town, is situate at the extremity of a small cove, in lat. 23° 38′ N., long. 58° 42′ E., in the gorge of an extensive pass, which widens as it advances into the interior. The town presents a fine appearance from the sea, but consists of narrow crowded streets filthy bazaars, and wretched huts, intermingled with low and paltry houses. The palace, however, of the Imam, the governor's house, and some others, are good and substantial. Muskat is important not only as the emporium of a very considerable trade with Arabia, Persia, and India, but also as the principal sea-port of Oman. Its imports are chiefly cloth and corn. The customs are fixed at 5 per cent. on all imported goods; but no duties of any kind are levied on exports, which consist chiefly of dates, madder, sharks' fins for China, and salted and dried fish. The returns are made principally in bullion and coffee. The population of Muskat and the adjoining town of Matarrah, which is a very large collection of huts about two miles distant, is estimated at 60,000, and consists of a mixed race of Arabs, Persians, Indians, Syrians, Kurds, Affghans, Beloochees, and others, who have been attracted by the equity of the government. They are chiefly engaged in commercial and maritime pursuits; the principal body of the merchants consist of Banians, who almost exclusively monopolize the pearl trade of the Persian Gulf. The common language is Hindoostanee, or lingua franca. The trade employs 14 ships and brigs, and 500 bungalows and battiles, from 60 to 400 tons; the coasting trade nearly 1200 more, from 8 to 40 or 50 tons. Muskat is the capital of a state, whose sultan, usually but erroneously styled the Imam of Muskat, claims the sovereignty of all the coast of Africa from Cape Delgado to Cape Guardafui; of the southern coast of Arabia from Aden to Ras-al-had, and thence northward as far as Bussrah; and of all the coasts and islands in the Persian Gulf, and the oceanic coasts of Persia as far as Sinde. His yearly revenue amounts to about 700,000 Spanish dollars. His only permanent military force is a small body of men accoutred like the Indian sepoys; but he can in three days collect from southern Oman 10,000 men, and can soon increase it to 30,000 by the accession of the neighbouring Bedwins. His flag now even crosses the Atlantic, and his traders have visited the ports of the United States. Muskat is considered the hottest town on the globe, being encircled by naked rocks, the sun's rays become concentred as into a focus, and the heat is at certain seasons almost intolerable; the thermometer ranges in January and February about 50°, but in July and August generally from 90° to 115°, and has even been observed at 122° in the shade; the Arabs emphatically call it *El-jehannum*, Hell. Very generally, however, this extreme heat is moderated, during the day, by cool and refreshing sea breezes. *Sohar*, a town of 9000 inhabitants, 140 miles W.N.W. of Muskat, carries on a considerable trade with Persia and India. There are several other large towns on the coast of Oman; but, with the exception of *Rostak*, which is large and well-built, there are none of any importance in the interior.

In Lachsa, the principal places are: *Ras-al-Khyma* or *Khaima* (Tent Cape), not far to the west of Ras Mussendon, a flourishing town, the residence of the sheikh of the Joasmee pirates, and the station of their fleet, which consisted at one time of 63 large vessels, and 800 barques, manned by 19,000 men. All their ships, building yards, and forts, were destroyed by the British forces from India in 1809, and a second time in 1819, but the town is again as flourishing as ever. Its harbour is the best on the coast. *El-Khatif*, a fortified town situate on a bay, with about 6000 inhabitants, is the most commercial place in this part of Arabia. *Ennf*, the chief town of the country of Lachsa, with about 15,000 inhabitants, consists of a fort, surrounded by an open village, fields, and plantations of date trees. *Grain* or *Koueit*, at the north-west corner of the Persian Gulf, is a town of 10,000 inhabitants, who live by fishing and trade.

In Nedjed the only place worth mentioning is *Derreyeh* or *Deraiah*, the capital of the ephemeral empire of the Wahabees, situate at the entrance of a deep and narrow valley, which is enclosed by arid mountains. It contained 28 mosques, 30 colleges, and 2500 houses; but in 1819 it was quite deserted, and we have no information of its present condition.

PERSIA.

This name is applied by European geographers to the wide region which extends from the basin of the Euphrates and Tigris, eastward to the Indus; and from the Indian Ocean, northward to the borders of Turkestan and the Caspian Sea. The name Persia, however, is quite unknown to the natives; and, whatever may have been the case in former times, this country does not now form one kingdom, but is divided politically into three regions, namely, *the Kingdom of Iran* or *Persia proper*; *Affghanistan* or *the Kingdom of Cabul*; and *Beloochistan* or *Belúchistan.*

THE KINGDOM OF IRAN

Is situate between 25° 40′ and 39° 40′ N. lat., and 44° and 62° E. long.; and is bounded on the east by Affghanistan and Beloochistan: on the west, by the mountains of Kurdistan, the river of the Arabs, and the Persian Gulf; on the north, by Russia, the Caspian Sea, and the Turkman desert; and on the south by the Persian Gulf and the Indian Ocean. Its greatest length, from north-west to south-east, or from Ararat to beyond Cape Jask, is about 1250 miles and its greatest breadth, from south-west to north-east, or from Russrah to beyond Meshid in Khorassan, about 870. The superficial area is about 500,000 square English miles. The southern and south-western portions form a narrow tract of level, dry, and arid country, without rivers, lying along the shores of the Persian Gulf. The appearance of this tract is everywhere the same, a succession of sandy plains; in viewing which the eye is occasionally relieved by plantations of date trees and patches of cultivation which are found near the wells and fresh water rivulets which are thinly scattered over the barren country. It is called the *Dushtistan* or *Gurmsir, i. e.* warm region. The heat during four months in the year is scarcely supportable even by the natives, and the atmosphere is so unwholesome that strangers who fall sick seldom recover. Along the shores of the Caspian Sea there is a corresponding narrow tract, but of a different character; for though the climate is very warm, and the heat in summer scorching, yet the winters are mild and the atmosphere is always excessively moist. To the human species this is a most insalubrious region; but, under the joint influence of heat and moisture, the vegetation is most luxuriant. The sugar-cane is cultivated with success in the low countries of Ghilan and Mazanderan, while the slopes of the mountains are covered with forests of acacias, lindens, oaks, and chestnuts, and their summits with the cedar, the cypress, and various other pines. Between these two narrow lowland belts lies an extensive table-land, generally of the great height of between 2500 and 3500 feet above the level of the ocean; though at Koom it is so low as 2046 feet; and in some other places even lower. It is, generally speaking, an immense, dry, salt plain, traversed by ranges of mountains, either isolated, or connected with the frontier chains, and includes many long valleys, which are, in fact, the only cultivated and populated parts of the country. This table-land is formed on the north by the great chain of mountains which connects the Himalayas with the Caucasus; a very high limestone ridge, rising abruptly from the shores of the Caspian, where it bears the name of *Elburz*, and the deserts of Turkestan, but declining more gently towards the inland country. The western and southern boundaries are formed by the mountains of Kurdistan, Louristan, and Bukhtiari, which extend south and south-east from Armenia to the Indian Ocean, consisting of from three to seven parallel ridges, separated by long narrow valleys, and forming so many terraces rising above each other, between the Gurmsir and the Sirhood, or cool country, in the interior. From both chains arise a multitude of ramifications which cover the country like a network, stretching in all directions, and heaped upon each other as if thrown together at random; but few of them rise more than 1000 feet above their base. There are but few passes leading through these natural walls of Upper Iran, into the low countries on the south-west and the north. Those which have acquired the greatest celebrity are: the *Median Pass*, which, beginning near Baghdad, passes through the Median gates (*Pylæ Mediæ* of the ancients), by Kermanshah, Bes tún, and Kungavar to Hamadan. 2. The pass called *Katul-i-dukhter* leading from Bushire to Shiraz; where the ascent is made by means of a road, most skilfully constructed, buttressed, levelled, and parapetted, so as not to alarm even the most timid, and broad enough to admit of several mules abreast. The summit is believed to be 6000 feet above the level of the sea, where there is a plain, green as an emerald in summer. Nothing, it is said, can be more striking than the change from the Gurmsir to the fine climate and rich soil of these elevated plains. Above Shiraz the road now bearing the name of *Dezht-i-Arjan* passes through winding mountain tracks and narrow ravines till it reach the plain of Merdusht, which contains the ruins of Persepolis. The summit of this pass is not less than 7200 feet above the level of the sea. From Persepolis the road proceeds over a third range of mountains, reaching the height of 6660 feet, to the valley of Ispahan, which is itself 4140 feet above the level of the sea. From this level the mountain passes farther north, near Kohrúd, rise nearly 2000 feet higher. A third great road begins at Gambrún or Benderabassi, and leads northward to Kerman over the Gebel Abad, but we are not aware that the elevation of its valleys and passes has been ascertained. Of the ancient Caspian and Hyrcanian gates (*Pylæ Caspiæ* and *Pylæ Hyrcaniæ*), leading through the mountains to Mazanderan, the former, supposed to be the one that leads past Kishlac, rises to 4572 feet; and the other, by Shahrúd into the province of Astrabad, to 3414 feet. The summits of the mountain range through which they extend, do not rise above 7000 feet, except only the peak of Demavend, which reaches 14,600.

The great plains of the table-land are all to be found in the eastern part of Iran. Westward, the table-land narrows to nearly half the breadth, but increases in elevation, rising into mountain masses which become higher and higher, till in the provinces of Azerbijan and Kurdistan, it is replaced by enormous mountains, and the high valleys which are found among their ranges. But the principal feature of this region is the great extent of its deserts, or sandy and salt plains, which form no inconsiderable portion of that long series of deserts already mentioned as extending across Africa and Asia. But, besides the characters common to them all, the deserts of Iran exhibit some peculiarities. The principal desert is the *Kuveer* or *Great Salt desert*, which extends, with a very irregular outline, over a great part of the provinces of Irak and Khorassan. In some places its surface is dry, in others it is a crackling crust of earth covered with efflorescent salt. Elsewhere it is marshy, the melting of the snow occasioning an accumulation of water in the lower parts, which in summer is evaporated, and leaves a quantity of salt in the form of cakes upon a bed of mud. In other places again, sand predominates, either in the shape of heavy plains, or wave-like hillocks, easily drifted by the wind,

and at times so light and movable as to be dangerous to travellers, who are not unfrequently buried under its heaps. There are also the deserts of Kerman, and Makran; and even the low country along the Gulf is little better than a desert.

The low shores of the Caspian Sea are exposed to oppressive heats in summer; but the winter is mild, and excessive humidity at all times pervades the atmosphere. Like tropical countries they have a rainy and a dry season: the heavy gales commence in September from the north and north-east, by which the clouds are driven against the mountains, and the rain in consequence descends in torrents, accompanied by terrific thunder storms. In the plains the rain continues till the middle of January, but among the mountains, it is converted into snow in November. The spring from March till May, is the most pleasant and healthy season. In summer, though rain is less frequent, the atmosphere contains much moisture, and the plains are almost constantly covered with vapour and fogs, which occasion fevers and other dangerous diseases. In the central table-lands excessively hot and dry summers are succeeded by rigorously cold winters. From March till May high winds generally prevail, with frequent hail-storms. From May till September the air is serene, scarcely a cloud is to be seen; dews are unknown; but refreshing breezes prevail during the night. From September till November high winds again prevail: the atmosphere however, still remains extremely dry: in winter snow storms are frequent, but thunder and lightning are very rare. This general character, however, of the climate is subject to local modifications. The mountainous regions of Kurdistan and Azerbijan derive from their great elevation and their forests a greater degree of humidity, and enjoy a more equal temperature, although the winters are sometimes extremely severe. Fars also, especially the valley of Shiraz, is exempt from great extremes of heat and cold, the thermometer in summer seldom rising higher than 90°, or sinking at night below 62°. In descending towards the shores of the Persian Gulf, the climate and the face of nature undergo a complete change. From the mouths of the Indus to those of the Euphrates, the narrow tract of low land which lies between the mountains and the sea bears a greater resemblance in soil and climate to Arabia than to the uplands of Persia. The country is almost an entire desert, and the summer's heat is insupportable; but the heat and dryness of the climate are the very circumstances which make it suitable for the growth of the date tree, which is almost its only vegetable product.

The table-land is entirely destitute of trees, and is chiefly covered, where there is any vegetation at all, with plants which require a saline soil. The soil is generally a hard clay, quite unproductive without irrigation, but wherever water can be obtained, the vegetation is most luxuriant. Wheat is the chief produce; barley, millet, and oats are also grown, and in Mazanderan, rice is cultivated with great care. The gardens of Iran are highly celebrated, and few countries surpass it in the variety and flavour of its fruits. It is believed to be the native country of the fig, pomegranate, mulberry, almond, peach, and apricot: it also produces oranges and lemons of great size, melons, quinces, and grapes; hemp, tobacco, opium, assafœtida, rhubarb, manna, saffron, cotton, turpentine, mastic, various kinds of gums, and galls-nuts. The most remarkable vegetable production is the plant from which assafœtida is obtained. Poppies, which produce opium, are cultivated all over the table-land, and in many places saffron is also raised. The silk worm is extensively reared, and the annual produce of silk has been estimated at 2,500 bales of 216 lbs. each.

The animals are, horses of different breeds, some of which are considered the finest and the handsomest in the East; camels of both the Bactrian and the Arabian species, and a mule breed, produced between them, which is considered preferable to the pure breeds in respect of strength, docility, and patience; horses, asses-mules, asses, wild asses, and buffaloes. Numerous flocks of goats and sheep form the wealth of the nomadic tribes, while antelopes, hares, zebras, foxes, and deer of various kinds afford amusement to the sportsman. Boars, bears, lions, and the smaller kinds of tigers lurk in the forests and the mountains, and hyænas and jackals infest the southern provinces. There are also tame and wild fowl of the same kinds as in Europe, with plenty of pigeons and partridges, eagles, vultures, and falcons.

Iran is not rich in mineral products. Salt is too abundant: the ground is everywhere impregnated with it. Copper is found in Mazanderan and Kerman; iron and silver in Azerbijan; sulphur and nitre in Mount Demavend; turquoise in Khorassan; and naphtha and bitumen in Irak. Medicinal springs of various kinds are numerous; and near Maraga, in the valley of lake Urmiah, there is a spring whose petrifying quality is so remarkable, that it produces a beautiful transparent stone, called Tabriz marble, which admits of being cut into large slabs, which take a good polish and form a principal ornament in the buildings throughout the country.

People.—The Iranee are divided into two great classes, the fixed and the erratic, the latter being called *Eliauts* or *Ilyats*. The former, called *Nishéree* by the rural tribes, are a mixed race of Turks, Tartars, Arabians, Armenians, and Georgians engrafted on the stock of the ancient Persians, and their general language is a mixture of Arabic with the ancient dialect of Fars. They are generally called *Tajiks* or *Tanjiks*; and by that name only are their colonies in Afghanistan and Turkestan distinguished from the other inhabitants. They are a fine race of people; they are not tall, but it is rare to see any of them diminutive or deformed, and they are in general strong and active. Their complexion varies from a dark olive to a fairness nearly approaching the northern European. They are quick of apprehension, vivacious, and naturally polite, sociable and cheerful, but prodigal and rapacious. The higher classes are kind and indulgent masters, and the lower ranks, so far as respects the active performance of their duty, and the prompt execution of orders, are equally good servants. But there is a great difference and variety of character among the inhabitants of different cities and provinces: some being as remarkable for their courage as others are for their cowardice. The highest class, from whom the ministers of state are usually selected, are called *mirzas* (secretaries or men of business), who are often highly accomplished, but versed in deceit, and not very remarkable for strict morality. They rarely indulge in martial or athletic pursuits, nor do they assume much state. They do not wear sword-, and are distinguishable by a culmdaum, or inkstand, stuck in their girdle instead of a dagger. The merchants are numerous, an often wealthy; the shopkeepers and tradesmen are distinguished for cunning and insincerity, but are versatile, humble, and persevering. The clergy, in Iran, are the expounders of the law, are a very numerous, wealthy, and powerful body; the higher ranks of whom are usually men of learning, of mild temper, and retired habits, and are very careful to preserve the respect which they enjoy, by cherishing the popular impression of their piety and humility; but nothing can be worse than the character of the lower classes of the clergy: their hypocrisy, profligacy, and want of principle, are the subjects of stories, epigrams, and endless proverbs. They are bigoted and intolerant, and are often accused of indulging the worst passions. To say, a man has the air of a mollah, is to assert that he cherishes sentiments of the most inveterate hostility. The cultivators of the soil appear, in general, to be in easy circumstances. Their houses are comfortable and neat, and are well supplied with the necessaries of life.

The character of the Eliauts or Ilyats is very different from that of the other class: they are generally sincere, hospitable, and brave; but rude, violent, and rapacious. Their origin is various; those that are indigenous are found principally in the hilly countries of the south and west; the others are chiefly Turks and Arabs. Many of them have become inhabitants of towns and villages, and the class is therefore divided into *Shehr-nishin* (dwellers in towns), and *Sahra-nishin* (dwellers in fields). A few only adhere to their former mode of life, live during the whole year in tents, in winter keeping to the plains, and in summer seeking the pasturage of the mountains. These look upon the Shehr-

nishin as degenerate. The principal or most distinguished tribes are:—The *Kajar*, to which the present royal family belongs, who occupy the country around Astrabad and Teheran, with branches in Casvin and Erivan. The *Afshars*, of Turcoman origin, are found in the greatest numbers at Abiverd, in Khorassan, the birth-place of Nadir Shah, the most distinguished member of their tribe, and at Kelat, his favourite stronghold. The *Laks*, a very large tribe of ancient Persian origin, and renowned as thieves, are much dispersed, but their principal seats are about Casvin, and in Fars and Mazanderan. The *Feili* are the most numerous tribe, and the most formidable, from their being all collected in one region, the western side of the mountains of Louristan, and the adjoining parts of Khuzistan; they number 100,000 houses. The *Eukhtiari*, a mountain tribe of 100,000 houses, inhabit the high lands of Louristan, and are a brave and hardy race. On the eastern frontier are two large tribes of *Arabs* and *Kurds*, who were transplanted thither by Shah Ismail, in the sixteenth century; the former have increased to 6000 tents, and the latter to 50,000 houses, and are formidable from their numbers and bravery, and their predatory habits. The *Aimaks* or *Eimauks*, a large Affghan tribe in Khorassan; the *Baluch*, in Southern Persia; the *Khodabendehlu*, near Teheran, of Persian origin; the *Shekagi*, a Turkish tribe, in Azerbijan; the *Memaceani* pride themselves on their antiquity, and preserve their original wildness and independence, by keeping almost constantly in the fastnesses of Fars, where they are celebrated as robbers. Most of the tribes, however, are so much dispersed, that they have lost that union which alone could render them formidable. Such of them as have become inhabitants of towns are subject to the laws and regulations of the community to which they have attached themselves. The Saha-nishins, though taxed in various ways, and made to contribute to the military service of the state, are comparatively less molested by the government than the other subjects. Their wealth consists principally in cattle and sheep. They breed camels and horses for sale and their sheep yield milk, which is made into *roughan* (liquid butter) and sold. Their peculiar privileges consist in liberty to range over districts from which none can dispossess them. They ascend in summer to cool regions called *yailak*, where they find pasture; in winter, they return to the lower and warmer districts, which they call *kishlak*. These regions are assigned by the government to each tribe; and whenever the appointed limits are encroached upon by other tribes, violent strife and battles ensue. The government is generally very jealous of the migrations of the tribes; and prevents them from moving from one province to another without the king's permission; but in troublous times, if they be strong enough to encounter opposition, they frequently pass from their old haunts to better localities. The existence of these migratory tribes being advantageous to the government, they are little oppressed: they are taxed at certain established rates on each head of cattle, and are called upon to serve in the king's armies. They are not compelled to labour on public works, like other subjects; and their taxes are levied by their chiefs, who transmit them to the government. In their small communities they are governed by *Reis-sefid* or elders. Their chiefs are the only hereditary nobility of Persia.—(*Some account of the Iliyats, or Wandering Tribes of Persia, by James Morier, Esq. Journal R. Geog. Soc. Lond.* VII. 230.)

Speaking generally of the Persians, says Sir John Malcolm, we may describe them as a handsome, active, and robust race of men; of lively imagination, quick apprehension, and agreeable and prepossessing manners. As a nation they may be termed brave; but their vices are still more prominent than their virtues. There being no such thing as a census in Persia, the amount of its population can only be conjectured. The fixed inhabitants are estimated by Mr. Fraser at 7,000,000; the Iliyats, by their own account, amount to nearly half a million of houses or families, or 2,500,000 individuals.

RELIGION.—The Tajiks, Ghelakis (inhabitants of Ghilan), Lours, and Baluchees, are Islamites of the Shiah, or heterodox sect; the Turkish and Arab tribes, and the greater part of the Kurds, are Soonies. Jews are met with in all the great towns; Armenians and Nestorians are also to be found, and a few Sabeans, or star-worshippers. It has been conjectured that there are between 200,000 and 300,000 professed Suffees, or free-thinkers. The clergy consist of various orders. The highest are Mushtiheds, of whom there are seldom more than three or four. Next in rank is the Sheikh-ul-Islam, or Ruler of the Faith, who is the supreme judge of the written law, in which capacity he enjoys a salary from the government. In every mosque of consequence, and at every considerable shrine, there are at least three clergyman; the mütwulle, who manages the temporalities; the Muezzin, who summons the people to prayers; and the Mollah, who conducts the ceremonies. If the establishment is rich, there are several mollahs, from whom is selected a polish-numaz (fugleman), who recites the prayers, and goes through the motions and genuflexions, to guide the congregation. The mollahs also preach occasionally a sort of sermons on texts from the Koran. Besides these, there are in every city, and connected with all seminaries of learning, a crowd of moilahs, who, like the French abbés of old, live by their wits, and have little of the priestly character but the name. The character of the class, as already mentioned, is generally very indifferent. The only remains of the ancient fire-worshippers, or followers of Zoroaster, called Guebres or Infidels by the Moslems, reside chiefly at Yezd, Kerman, Shiraz, Isjahan, and Kashan; but they are very few in number, there being only about 2300 families in the whole of Persia.

EDUCATION and LEARNING.—The Persians received their arts and sciences originally from the Arabs. The Ptolemaic system of astronomy was implicitly accepted as true, and still continues to prevail. During the reigns of the Sufavey princes the mollahs had acquired great power and independence. Mahomet has made no positive provision for the ministers of his religion, and has denounced priestcraft in very strong and decided language. Nevertheless, during the long reigns of the house of Sefi, and even earlier, the endowments of land and other property which had been made to the colleges, mosques, and other religious institutions, had become so large in the hands of the mollahs, that they possessed above a third of the whole revenues of the kingdom, and were therefore, as a body, powerful and formidable. During the ravages which followed the Affghan invasion and the extinction of the Sufaveys, their estates suffered considerably and fell into decay, and Nadir Shah seized the opportunity of proposing that if they would relinquish all claims to their territorial possession he would in return allow them a fixed income out of the government treasury as pensions. Thus the literary institutions were deprived of all their estates; the colleges and public buildings which had been ruined during the revolution were never restored; and those which had withstood the political storm soon fell, from want of repair, to utter ruin. After the establishment of the present dynasty, a severe struggle took place between the regal power and the influence of the mollahs, who possessed at that time great authority over the minds of the people. The agreement made with Nadir Shah had served his purpose of rendering the mollahs completely dependent on him; but when the country again became involved in anarchy, the stipulated pensions were gradually diminished, till at length the mollahs were obliged to seek some other means of subsistence. They consequently allied themselves more closely than ever with the people, on whom their sole dependence rested, and by their own religious zeal, and by appealing to the superstitions of the populace, and constantly rousing their prejudices or their fears, they succeeded in obtaining the most complete ascendancy over their minds, and thereby acquired so formidable a power, that they have ever since set at defiance the authority of the kings, who are compelled to court their friendship and solicit their blessing. Futtey Aly Shah, during his reign, increased their pensions, and restored the college lands as far as possible. Several colleges were built at Teheran, one by himself, and others by his nobles and relations. From the beginning of the present century Persian literature has been decidedly on the advance. A spirit of intellectual refinement is beginning to influence society, and

a general thirst for knowledge prevails among the Persians of the present generation. With the exception of some of the lowest peasantry and actual paupers, there is now scarcely a mechanic or labourer who does not send his children, especially the boys, to school; but the system of instruction is so bad, that the pupils, after four or five years' attendance, are unable to read or write. The children are first taught the Arabic alphabet, and are then required to read the Koran in its original language; and until they can do so fluently (without, however, being made to understand a word), no attempt is made to teach them their own language. From this point, however, the system is tolerably good; those whose parents can afford to keep them longer at school, and those who are intended for the university, now make a rapid progress, and on the average, become in three years respectable scholars; after which, and not till then, Arabic is taught grammatically, and then for the first time a young man begins to comprehend the meaning of the Koran. The absurdity and the mischievous effects of this system are daily becoming more and more obvious. Another event, which must necessarily have important consequences on literature, is the introduction and establishment of the printing press. The first was established at Tabriz about 25 years ago; six years later another on a larger scale was set up at Teheran; and a third has since been established at Ispahan. The books which have been printed hitherto are chiefly elementary schoolbooks, and works on theology and law. Even the girls are now much better instructed than formerly, and a father does not fear, in defiance of the Imams, to allow his daughter to learn to write, an accomplishment which those leaders of the faithful have strictly prohibited. They would indeed have forbidden women to open a book, but for the clear and unequivocal directions of the prophet himself, who exhorts all his followers, without distinction of sex or caste, to acquire knowledge, and particularly to study the Koran. The good effects of the education of women are becoming more apparent every year; the greater number of them will not now consent as formerly to be married to men whom they have not seen, and hold it no breach of filial duty to refuse obedience on such occasions.

Ispahan contains the largest and most important university. There is one also at Shiraz, and a third at Meshid. In all of these the Arabic language and literature, and the Mahometan laws and theology, are studied; but each seminary is celebrated for some particular branch or branches of learning. Accordingly Meshid is considered as the seat of natural philosophy, but in truth very little is taught there. In mathematics the students scarcely ever go beyond the elements of Euclid and the Almagest. The Ptolemaic system of astronomy is also studied to a limited extent, and the belief in astrology is as strong as ever; this keeps the credulous in the constant practice of algebra, which they understand tolerably well. Of geography they literally know nothing. Ispahan is the great school for metaphysics and philosophy, and the students cultivate these sciences with logic and usool (general principles of law) to singular perfection. The city contains about 30 inhabited colleges, some of them very large and flourishing, and the number of masters and students in and out of college may amount to 6000 or 7000. At Shiraz there is a curious mixture both of men and studies. There are to be found the high orthodox theologians, the Akbarees, who consider every branch of literature, excepting *hkuk* and *padith* (law and traditions) as useless, and hold that whoever wastes his life in any other pursuit incurs the denunciations of the holy Imams, already recorded against such infidels. There, too, are the *Hakeem-Uoodies*, or religious philosophers, who, although they consider the study of the law to be the most important, yet, according to the clear declaration of the prophet himself, that "the knowledge of anything is better than being ignorant of it," do not think it wrong to study the usool and metaphysics. Again, there are the *Soofies*, who are divided into two great branches, the *Soofy-Motasherria*, or orthodox Soofies, who admit (rather reluctantly) the mission of the prophet, but not directly from above: their belief is that he was himself a Sooly, inspired by the divine spirit to guide the vulgar and organise society; but they do not consider themselves bound to obey his precepts as they stand in the Koran, some of which they explain metaphorically, and act accordingly; not believing, for instance, that an occasional glass of Shiraz wine, or food which is not injurious to the health, can hurt any one. The others are termed *Soofy-Mollacks*, or abstract philosophers, who look upon the Koran as a fine specimen of Arabic composition, but do not entertain any particular reverence for its author. The Soofies are upon the whole the most rational and intelligent of the Persian literati; they do not hesitate to study any subject, nor to discuss any point, whether intellectual or moral, with any rational being, whether infidel or Moslem. There are, and have always been, more sound and learned men among the Soofies, than among any orthodox class of the educated men in Persia; and however misrepresented and calumniated by their enemies, the superstitious Moslem, their morality is in general beyond question.

Besides these three principal universities there is another which furnishes the Persian colleges and societies with many highly orthodox mollahs, at Kerbelah, where there is a seminary for the study of law and philosophy, chiefly attended by Arabs and Persians. The arch-Mojtahed of all Persia generally resides there as head of the university, and thence sends his resolas or mandates to all parts of the kingdom, together with numerous disciples, whose high Mahometanism and khoshkydamagh (dryness of the brains, as the Soofies term it), baffle all description. But Soofieism is gaining ground in Persia, and those khoshk-damaghs are not so much feared, nor are the Soofies so much abused and persecuted as formerly. The greater part of the literary men of Shiraz are Soofies, who scarcely disguise their principles, and yet are rarely molested or interfered with by the orthodox. A Soofie doctor may now sit in his divan-khanah (outer room), with his pupils around him, without fear of being assailed by the mollah-mob, persecuted by the fakihs, or bastinadoed to death, as he probably would have been 25 years ago. The courses of study at the colleges comprise Arabic and Persian literature, logic, metaphysics, moral philosophy, theology, law, usool, and tafseer (commentaries on the koran), all of which they study thoroughly. Their knowledge of mathematics is very limited; with natural philosophy they are in general but imperfectly acquainted; of geography and geology they know little; in fact they are rather a literary than a scientific people. Poetry has been in all ages, and is still, a favourite pursuit, and there is scarcely a species of composition which the Persian poets have not cultivated with success. During the reigns of the Sufavey princes Persian literature began to flourish. They spared no pains to improve the country; gave every encouragement to literature and science; and built and nobly endowed colleges in almost every city. The nobles followed their example. No sooner was a college built by the sovereign, than others were commenced by his servants, and endowed with lands or money, amply sufficient to render the students, who never pay for their education in any college, and the teachers comfortable and independent. Under Abbas the Great Ispahan became a seat of learning, and Shiraz resumed its ancient fame. The greater number of colleges were established at Ispahan, and an immense congregation of professors and students were collected there from all parts of Persia, and formed a large and brilliant university. The system of instruction, the modes of study, and the habits of the students, are excellent. Every college has a superior, who, with assistants, presides over its discipline, and manages its property, if it have any. There are no formal degrees conferred, except on the immediate ministers of religion, nor any professorship founded. The lectures are all public, and open to any person who may choose to attend them. Any man may act as a professor and give lectures, but the number of his pupils will of course depend upon his ability. There is no emolument attached to a professorship, nor do the scholars pay for instruction; public fame and honour are the only rewards.—(*History of Persian Literature by Mirza Ibrahim, of Haileybury College; published in Athenæum* 1837.)

GOVERNMENT.—The government is an unmitigated military despotism, the country and the people being considered the property of the king, whose word is law. The nomadic tribes, however, are ruled immediately by their khans, whose authority is sometimes very limited. The civil and criminal laws are founded on the precepts of the Koran, and are administered by the Sheik-ul-Islam and his deputies, in the sherrah courts. There is also the *Urf*, or customary law, administered by secular magistrates, of whom the king is the chief; but the respective powers and privileges of these two branches of judicature have always been matter of dispute. It is scarcely necessary to add, that in Persia, as in every other oriental country, justice is sold to the highest bidder. The governors, indeed, civil, military, and ecclesiastical, from the highest to the lowest, seem never to have entertained the idea that the administration of justice, and the preservation of the public peace, are their highest, and, in truth, their only legitimate functions. They appear rather to look upon their subjects as things made for no better purpose than to be cheated, abused, robbed, and murdered, for their amusement, and for the gratification of their appetites and passions.

The public revenues which reach the royal treasury are said by Mr. Fraser not greatly to exceed a million and a half sterling; out of which are paid the expenses of the royal family; the salaries of officers not provided for in the expenditure of the local government; and the maintenance of *gholams*, or household troops. But the greater part of the public revenues are levied and expended by the provincial governors, who form a sort of petty kings, uncontrolled in their administration, though appointed by, and amenable to, the Shahan-shahee, king of kings, when he has power to enforce his commands.

The army is principally composed of irregular troops, supplied by the nomadic tribes, and officered by their chiefs. During the reign of the late king the European discipline and tactics were introduced to a considerable extent, but without much success; though, it must be admitted, that the regular troops, and the artillery in particular, have been very serviceable in reducing the rebel chieftains of Khorassan, who had nearly become independent. Against the regular troops the rebels could not keep the field, and their fortlets have been easily demolished by the artillery. The amount of force which the kingdom can raise, there is no means of determining, though the late king is said, in various ways, when he took the field, to have made up a numerical force of 100,000 fighting men, besides double or treble the number of camp-followers. The Persians are naturally qualified to make good soldiers; they are able-bodied, and capable of enduring fatigue and long marches with little food; and they acquire military discipline more readily than Europeans; but their military organization is defective to the last degree. Besides these regular and irregular troops, the king has a class of military favourites, called *gholams* or slaves, who are Georgian or Circassian captives, intermingled with the sons of the first nobles of Iran. The situation is one of honour as well as of contingent emolument, and is eagerly sought after even by the highest ranks. This body amounts to about 3000 or 4000, who are chiefly distributed about the king's residence, and attend him in camp. They are well mounted, and armed with matchlocks or muskets, swords, and sometimes pistols, and generally carry a shield on their shoulders. Their pay varies according to their standing and estimation. They are commonly employed as messengers on confidential business, and the more experienced of them are often entrusted with affairs of high importance, in which they contrive to amass large sums by extortion. Their name is a terror to the country, and the arrival of a *gholam-e-shahee*, or king's slave, is sufficient to throw a whole district into alarm.

PRODUCTIVE INDUSTRY AND COMMERCE.—The great mass of the fixed inhabitants are engaged in agriculture and manufactures; the nomadic tribes are herdsmen and shepherds. All the Jews, and many Armenians and Arabs are engaged in commerce. Agriculture is followed in many places with much activity and intelligence, in spite of the obstacles arising from the salt impregnature of the soil, the want of rivers, the obstruction of the aqueducts, bad roads, civil and foreign wars, and the oppressions of every kind to which the people are subject from a tyrannical and rapacious government. The Iranee have a natural talent for the mechanical arts, some of which they have carried to great perfection. They excel particularly in making sabres, in copper and brass work, perfumery, dressing of leather, pottery, silk plain and brocaded, carpets, felts, painted cloths, and shawls. Their commerce is principally carried on by land, their maritime trade being all in the hands of the English, Arabs, and Russians. Their principal port on the Persian Gulf is Bushire; and on the Caspian, Enzillee and Balfrush. The land trade is carried on by caravans, with Turkestan, Turkey, and across Turkestan and Affghanistan, with Russia, India, and China. The principal commercial towns are Tabriz, Kermanshah, Hamadan, Cashan, Ispahan, Shiraz, Balfrush, Mushed, and Nishapore. The principal articles of exportation are pearls, silk, horses, camels, goat-skins, camel-skins, lamb-skins, sal-ammoniac, naphtha, amber, turquoises, copper, sulphur, rice, madder, gall-nuts, saffron, raisins, dates, pistachios, opium, almonds, salep, cotton, tobacco, silk-stuffs, cotton-stuffs, shawls, cloths, carpets, felts, leather, rosewater, asafœtida, hennah, copper and steel articles, pipe-heads, &c. The importations are principally indigo, cochineal, coffee, sugar, rhubarb, drugs, furs, tin, lead, iron, porcelain, tea, diamonds, rubies, and other precious stones, ivory, eunuchs, fine cloths, and all other kinds of European merchandise. There are no roads in Persia but such as have been made by the constant passage of baggage, cattle, and travellers.

DIVISIONS.—For administrative purposes, Iran is divided into large provinces, governed by *beghlerbeghs* or great lords, who have under them *kakim* or governors of districts, and *darogas* or governors of towns; but the limits of these provinces are frequently varying, and do not always comprise the territories of the nomadic tribes. Geographers, therefore, continue to retain the ancient divisions of the country, namely, *Kurdistan*, *Azerbijan*, *Ghilan*, *Mazanderan*, *Astrabad*, *Khorassan*, *Irak-ajemi*, *Khuzistan*, *Furs*, *Laristan*, *Kerman*, and *Seistan*. These we shall now describe separately in their order.

PERSIAN KURDISTAN OR ARDELAN, situate to the north-west of Irak, and to the south of Azerbijan, measuring about 160 miles in length, by 100 in breadth, is composed of a series of hills and table-lands, intersected by narrow valleys, where the villages are built in situations to protect them from the weather. The soil is good, and would yield abundance of wheat and barley; but the Kurds content themselves with raising what is necessary for their own subsistence. Tobacco is cultivated in small quantity; and the forests of oak supply abundance of timber and gall nuts. The country is inhabited by various tribes of Kurds, but the principal chief, who claims at least the nominal supremacy under the king of Persia, is the Walli of Ardelan, who resides at *Senna*, a romantic and flourishing place, in a deep secluded valley, which is filled with orchards.

AZERBIJAN, adjoining the north-western frontier, is one of the most fertile and most productive provinces, but is high, rugged, and cold. It extends in length 275 miles from N.W. to S.E., and 240 in breadth from S.W. to N.E. Nearly the whole of it consists of a succession of lofty mountains separated by deep valleys, which are partially cultivated, and open into fertile plains. In the very centre the mountain of Sahend raises its enormous mass, like a truncated cone, to the height of 9000 feet. To the east of Tabriz, and near Ardebil, Savellan rises to 12,000 or 13,000 feet, with every appearance of having once been a volcano, though no crater is now visible, it being probably covered with the snow. To the east the province is bounded by the mountains of Talish or Massula, which separate it from Ghilan; and on the west by the high range which extends southward from Mount Macis, and divides Azerbijan from Turkish Kurdistan and Armenia. The western portion of the province contains the large lake of Shahee or Urumiah, which is generally about 83 miles long, and 17

where broadest; its greatest depth is generally 45 feet; but it is subject to great variations both in depth and extent at different times. The water is so salt that no fish can live in it, though the smaller classes of zoophytes are found in considerable quantity, and is so buoyant that a man can scarcely stand in a depth of three feet; and will actually float on the surface. In shoals, which are not agitated by the wind, the water forms almost a paste of salt. The lake contains 36 islands, and a large peninsula on the east side, formed of a mass of rock 4 miles in circumference, containing 12 villages, and sometimes entirely surrounded with water. (*Monteith, Journal R. Geog. Soc. Lond.* III. 54.) Several large streams of bitter brackish water flow into it from the north, and it probably contains numerous subaqueous saline springs. The lake is bordered on its west side by the rich alluvial plain of *Selmas*, which extends westward to the mountain border of Turkey, and is thickly studded with villages. In the north-east there is another fertile plain, named *Chuvul-Mugan*, which contains excellent pasturage, but is infested by a dangerous kind of snakes. Azerbijan forms the north-western portion of the great table-land, and has a general elevation of 4500 feet. The climate is healthy and temperate, though the summer heat is considerable; during winter the atmosphere is generally very clear, but the cold is intense, and is the more severely felt, in consequence of the want of fuel, the only article of which is dried cow-dung mixed with straw. During several months in winter, the country is generally covered with snow; but, nevertheless, in the plain round Lake Urumiah, the winters seem not to differ much from those of northern Italy. The principal town is TABRIZ (or *Tebreez, Tauris, i. e.* fever dispelling), a prosperous commercial town, with a large but very fluctuating population. It stands about 4500 or 5000 feet above the level of the sea, in a dry and stony plain, bordered on three sides by bare mountains of the most fantastic forms, while on the fourth side the plain extends without interruption to Lake Urumiah, which is 30 miles distant. The city is about four miles in circuit, and is surrounded by a brick wall; and the citadel, a high and massy structure of brickwork, is visible from a distance rising above the broad screen of gardens which mask the approach to the city, and which, being cultivated with great care, yield every kind of fruit in the utmost perfection and abundance. The winter cold at Tabriz is severe, and snow sometimes lies for six months without intermission. *Dehman* is a modern town of about 15,000 inhabitants, near the north-west corner of Lake Urumiah. *Ardebil*, 85 miles E. of Tabriz, is an insignificant town, which in 1837 presented the appearance of a mass of ruins, but is remarkable as the original family seat of the Sophi or Suffavean dynasty of kings, who ruled Persia during the 16th and 17th centuries, and for a fort constructed on European principles. *Maragha*, an ancient town with 15,000 inhabitants, is noted as having been the residence of Hulagu Khan, who conquered Persia in the 13th century, and is supposed to have been buried there. It contained, likewise, the observatory of the celebrated astronomer Nazir-ud-deen; and near it are some singular caves, with altars not unlike the Lingam of India. *Urmi* (corrupted to *Rhumi, Ur miah*, or *Oormiah*), the birth-place of Zoroaster, the founder of the ancient Magian religion, is now a well-fortified town of 20,000 inhabitants, 60 miles S.E. of Tabriz, and 12 miles W. from the edge of the lake. *Khoi*, one of the finest towns in Persia, has 30,000 inhabitants, 80 miles W.N.W. of Tabriz. *Selmas*, N.W. from the lake, with sulphureous water. *Miana* or *Meeanah*, 94 miles S.E. by E. of Tabriz, a small dirty town of 2500 inhabitants, at the passage of the Sufeed-rud, on the road to Teheran, noted for a species of bug, the bite of which is said to be fatal. Near the south-eastern border of the province is a remarkable place named *Takht-e-Suleymun*. Solomon's throne, which is supposed by Major Rawlinson to be the *Ecbatana* of Dejoces, described by Herodotus, and particularly with the indestructible luxuriance, and perfectly inexhaustible. Above the narrow plain rise the mountains in two ridges, the first clothed with forest, as those in the plain below, and thrown forward at those points which in some places reach the coast. Beyond, this range, which is traversed in all directions by the wildest and most romantic glens, the peaks and rocky masses of the Elburz are seen rising in naked grandeur, and spotted with snow even in September, their elevation being from 6000 to 9000 feet. The coast line with a ridge of sand-hills, from 2000 to 3000 feet high and 200 feet broad, behind which lies a morass of stagnant water, in many places forming large inland lakes, whose banks are overgrown with alders of enormous size, plane trees, cypresses, poplars, and other trees adapted to a moist soil; and, in the rainy season, the country is so flooded as to exhibit the spectacle of a boundless forest in a swamp. It is, indeed, impossible to imagine a more luxuriant vegetation than that of Mazanderan. Exposed alternately to heavy rains and a powerful sun, the rich soil throws out in profuse abundance every form of vegetable life. The vivifying breeze from the Caspian is sometimes thick like a Scottish mist, and is in consequence called the *bad-e-kheir*, or evil wind. The Mazanderanee are a fine hardy race, of a deeper color complexion than the inhabitants of the northern parts of the table-land of Iran, and distinct from them in manners and language. The language of Ghilan is a dialect of the Persian, and is that of the Talish, a small province which borders and forms a continuation of Ghilan on the north. The principal places in Ghilan are, *Resht, Enzelee, Tonun*, and *Lengeran*. *Resht*, the capital, is a busy trading town; but its population (10,000 or 8000) was recently reduced by cholera and other calamities, to 15,000 or 20,000. *Enzelee* or *Enzelli*, its shipping port, 12 miles distant, is a town of from 300 to 400 houses, at the east end of a sandy spit, with an excellent harbour, a good bazaar, and a population chiefly Russian. The spit, which is 15 miles long, and in some places only 150 yards wide, is divided from a similar tongue of land, called Kazeran, by a strait 500 yards wide, but only five feet deep; and inside the water is usually so much as to be fit for drinking; about 70 streams flow into the lagoon. *Lehejan*, another considerable town in Ghilan, with 12,000 inhabitants, 35 miles E. by S. of Resht. *Sari*, the capital of Mazanderan, is a large town surrounded by a mud wall two miles in circuit, with 10,000 inhabitants. *Amol*, 40 miles west of Sari, on the river Heraz, 12 miles from the Caspian, has a bridge of 12 arches over the river, and the ruins of a mausoleum erected by Shah Abbas the Great to his maternal ancestor Meer Buzurg, king of Sari and Amol, in 1575. *Feiruzkoh* or *Lafoorkoh*, once a flourishing commercial town between Amol and Sari, on the river Bawul, at the mouth of which is its port of *Mushedi-Sir*. The population, in 1822, was estimated at 30,000; but before 1831, it was reduced by cholera and loss of trade to about 3000. *Astrabad*, the capital of the small province of the same name, has a circumference of three miles, and had once a population of 40,000. *Asheraf*, 60 miles west of Astrabad, was the favourite residence of Shah Abbas the Great.

KHORASSAN or KHORASAN, is a large province of very fluctuating and uncertain limits, forming the north-eastern portion of Iran. The mountain range of Elburz, after passing to the south of the Caspian Sea, here spreads out into a great width, in some places extending to 200 miles, and is di-

vided into ridges with intervening valleys which communicate with each other by defiles or passes, and form an extensive aggregate of districts, many of which are well cultivated and populous. Towards the northern desert this mountain region presents a considerable declivity, called *Ataḳ* or *Damán*, *i. e.* the skirt; but towards the deserts of the interior it declines less abruptly. Speaking generally, Khora-san, formerly one of the richest provinces of Iran, is now almost a wilderness, thickly strewed with the ruins of large towns, and other vestiges of former prosperity. For many years it was in a state of anarchy, and divided among petty chiefs, who by turns conciliated or defied the king of kings. It has been again reduced to obedience; but, under so mischievous a system of government as now exists in Persia, it seems to have little chance of recovering its former prosperity. MUSHED (MESCHED or MEKSCHID), the capital, is celebrated for, and owed its prosperity to, the tomb of Reza, one of the twelve Imams, descendants of Ali (see *antè*, p. 124), which is contained in a most splendid mosque. Besides the remains of the Imam lie those also of the celebrated Caliph Haroun-al-Raschid, who died at *Tús* or *Toos*, a city now in ruins, a few miles to the north-west. Mushed is, in consequence, the resort of great numbers of pilgrims, and had, not many years ago, a population of about 100,000; but, when visited by Mr. Fraser in 1834, it was nearly depopulated; the few remaining inhabitants were reduced to poverty; thousands of beggars at the point of starvation annoyed the traveller; and even the mosque itself, shorn of its glories, was falling to ruin. *Kabúchan*, 100 miles N.W. of Mushed, is a large town of 15,000 inhabitants, and is the seat of the most powerful of the Kurdish chiefs of Khorassan. *Nishapúr*, 90 miles E. by S. of Mushed, once a large city, now contains only 5000 inhabitants. *Kelat* or *Kúlat-Nadiri*, the stronghold of Nadir Shah, is a valley 50 or 60 miles long, by 12 or 15 wide, surrounded by mountains so steep, that a little help from art has rendered them quite impassable, the rocks being scarped into the form of a huge wall. A stream runs through the valley, and its entrance and outlet, the only points of access, are fortified by walls and towers which are deemed impregnable. The valley contains a number of villages, and 2000 families. *Mero* or *Meru-Shah-Jehan*, once a famous city of Khorassan, is now a mass of ruins, beyond the present limits of the kingdom. *Turshiz*, *Tubbus*, *Serukhs*, and *Tabas*, are all large towns, with some trade, to the south and south-east of Mushed. *Herat*, 200 miles S.E. by E. of Mushed, is a large city, with a population of about 45,000, is well fortified, and about three quarters of a mile square, or three miles in circuit. It is divided into four quarters, by four long bazaars, covered with arched brickwork, which meet in a small domed square in the centre of the city. The city contains altogether about 4000 houses, 1200 shops, 17 caravanserais, 20 baths, numerous mosques, and fine public reservoirs of water. It is, however, one of the dirtiest cities in the world. The necessaries of life are plentiful and cheap; and the water and the bread of Herat are proverbial for their excellence. The climate is said to be salubrious, though the heat is excessive for two months of the year, and though in winter there is much snow. Herat is the emporium of the trade between Persia and India. For many years it belonged to the late kingdom of Cabul; but, since the downfall of that kingdom, it has been possessed by a branch of the Dúrannee royal family, as an independent sovereignty. It is still, however, claimed by the king of Persia as a part of Khorassan; but he was recently foiled in an attempt to make himself master of it. The town is situate in a beautiful and extensive plain, or long valley, watered by the *Hurrarúd*, which runs northward to the desert, where its termination is unknown.

IRAK-AJEMI or PERSIAN IRAK, is the largest and one of the most valuable provinces of the kingdom. It forms part of the great table-land; and is almost everywhere intersected with valleys of indefinite length, but seldom exceeding 10 or 15 miles in width. The hills which border them are barren, and stretch almost invariably west and east, gradually sinking into the desert, or extending into Kerman and Khorassan. The valleys are nearly destitute of water, except after the melting of the snow, and only a small part of them is cultivated. The north-western part of the province forms an elevated plain, varied with gradual ascents and descents, and furrowed by deep valleys in which the rivers flow. ISPAHAN or ISFAHAN (the SPAHAWN of old travellers), the capital of Iran under the Sophi kings, and at that time a very large and splendid city with nearly a million of inhabitants, is now deserted by the court, and a great part of it is in ruins. It stands in a plain 4140 feet above the level of the sea, upon the banks of the Zeinde-rúd, which is crossed by three fine bridges, and is surrounded by a mud wall 24 miles in circuit. Nothing can exceed the fertility and beauty of the neighbouring valley, and the first view of the city is still very imposing. A nearer view however dispels the illusion; though much still remains of wealth, if not of splendour. Ispahan has still a considerable trade, and a population of about 150,000. On the south side of the river are the two suburbs of *Isfahanuk* or *Little Ispahan*, and *Julfa*; the latter named after a town of Armenia, whose inhabitants were transported hither by Shah Abbas the Great. TEHERAN or TEHRAN, the modern capital of Iran, and during forty years the residence of the late king Futtey-Ali, 220 miles N. of Ispahan, is four miles in circuit, and fortified with a mud wall, towers, and a wide and deep ditch. Its only important edifice is the ark, a fortified palace or citadel. The population varies with the season from about 10,000 to 60,000. Teheran stands in a gravelly plain 3786 feet above the level of the sea, which is bordered by a high range of mountains. A gazette was commenced at Teheran in 1837, under the auspices of the Shah. About 40 miles E.N.E. of Teheran, is *Demawend* or *Demawund*, an enormous volcanic peak, rising 14,300 feet above the level of the sea. About 10 or 12 miles S.E. of Teheran are the extensive but almost obliterated remains of *Rhe* or *Rhages*, the contemporary of Nineveh and Ecbatana, the capital of the Parthian kings, and the birthplace of the great caliph Haroun-al-Raschid. *Casbin*, (*Cazvin*, *Kazvin* or *Casveen*), 96 miles W.N.W. of Teheran, one of the largest and most commercial cities of Iran, is situate in a large plain or valley, 20 miles in breadth, which affords good pasturage, contains numerous villages, and is in some parts well cultivated. The town is approached through a vast extent of vineyards and orchards inclosed by high walls. The grapes of Casbin are considered the best in Iran; and its pistachio nuts are also abundant and highly esteemed. The town is inclosed by a mud wall with towers, and is said to exceed Teheran in size, though it is not so populous. It contains whole streets lying in ruins, and has no building of any note. Population about 40,000. *Sultaniah*, 60 miles W.N.W. from Casbin, is a mere village amidst the ruins of a great city. In summer, the late king and his court, accompanied by a great part of the inhabitants of Teheran, used to encamp on this plain of Sultaniah to avoid the heat of the plain of Teheran. About 70 miles E. of Teheran, on one of the mountains of the Elburz, is the fortress of *Firúz-kúh*, which is considered impregnable, and is of great importance as commanding the most accessible pass leading to Mazanderan. *Zenjan*, 90 miles W.N.W. of Casbin, is a considerable town with 8000 inhabitants, at the junction of the roads which lead from Teheran and Hamadan to Tabriz. *Hamadan*, supposed by some to be the ancient *Ecbatana*, 270 miles N.W. by N. of Ispahan, and 198 W. by S. of Teheran, stands at the base of Mount *Elvend* or *Elwund*, the ancient *Orontes*, and is merely a collection of clay-built houses, with 50,000 inhabitants. The sides of the hill abound with antiquities; but the only buildings which are entire are the tomb of the celebrated physician Avicenna, and the supposititious tomb of Esther and Mordecai. Hamadan is the centre of a considerable trade; has extensive and well furnished bazaars; and a very active and bustling population. *Kungaur* or *Kenghevar* (*Concobar*), a small town 20 miles W. by S. of Hamadan, contains the ruins of a splendid temple of a goddess, corresponding to the Greek Artemis and the Roman Diana. In the same direction, at the distance of 52 miles, is *Kermanshah*, a thriving city with 35,000 inhabitants, adorned with many handsome public buildings. It is noted for the manufacture of car-

pets; and the vicinity is celebrated for the production of wheat and superior mules. About 90 miles W. of Kermanshah, is *Kasr-i-Sherin*, a village, containing the remains of two magnificent palaces built by Khosroo-Parviz, one of the Sassanian kings, as a retreat for himself and his beloved wife Sherin. It is 11½ miles N.E. of Bagh'dad. At *Bestun*, 21 miles E. of Kermanshah, are the remains of a large piece of sculpture on the face of a rock, supposed to represent Semiramis and her guards, but so much defaced that scarcely any outline can be traced; the figure and also an inscription of nearly 1000 lines of arrow-headed letters, exhibiting the religious vows of Darius the son of Hystaspes after his return from the destruction of Babylon, on the revolt of its governor. *Koom* or *Kum*, a large but ruinous town, the abode of a fanatical, ignorant, and bigoted people, is rich only in shrines and priests, and contains more domes and minarets than inhabited houses. It is situate 175 miles W. by N. of Ispahan. As a place of pilgrimage it ranks next to Kerbelah and Mushed; the principal object of attraction being the tomb of Fatima, the sister of the Imam Reza. From the holiness of its saints and priests, Koom has acquired the title of *Dar-al-Mursheda* (the abode of the pious). *Kashan*, 105 miles N. by W. of Ispahan, a neat, populous, and busy town, situate in a well-cultivated and fruitful country, is famous for its manufactures of silk and cotton stuffs, brocades, carpets, and copper-wares. *Yezd*, 250 miles E. of Ispahan, situate in a dry but well cultivated and fruitful oasis, nearly encircled with mountains, and connected with the fertile tracts eastward of Ispahan, by a series of small oases or islands in the desert, is one of the most prosperous commercial and manufacturing cities of Iran. It is a great mart for the interchange of commodities, between eastern and western Persia; and its own manufactures of silk and other stuffs, felts, sugar-candy, and sweetmeats, enjoy great repute, and command a ready sale. Population about 50,000, amongst whom are more than 3000 families of Guebres, followers of the religion of Zoroaster, an industrious and patient race, who are busily occupied in trade and agriculture. The south-western part of Irak is a mountainous region named Louristan, inhabited by nomadic and pastoral tribes, part of whom are now classed under the general name of Bukhtiari. It contains the towns of *Kermanhad*, *Hissar*, *Burujird*, and *Saharend*.

KHUZISTAN, the ancient SUSIANA, lies along the eastern or left bank of the Tigris and Shat-el-Arab, at the head of the Persian Gulf. A large proportion of the province is little better than a forsaken waste; and the southern part of it is a desert arid country called *Chab*, which is possessed by an independent Arab tribe. The mountainous portion, however, to the north and east, contains several fertile valleys of great extent, but only partially cultivated. *Shuster*, the capital, is a well-built town, with stone houses, but narrow and dirty streets, and contained about 15,000 inhabitants before it was nearly depopulated by the plague in 1832. *Dizful*, between Shuster and Sus, is now considered the principal town of the province, and may contain about 20,000 inhabitants.—(*Jour. R. Geog. Soc.* IX. 671.) At *Sus* or *Shus*, 90 miles N.E. by N. of Kornah, and 37 W. by S. of Shuster, are the ruins of a great city six or seven miles in circumference, which present the appearance of irregular mounds of bricks and broken pottery. Sus contains also a modern building called the tomb of Daniel. *Susan*, on the Kuran, 160 miles N.E. by E. of Kornah, and 50 E. of Sus, also contains the ruins of a great city, and the tomb of Daniel, called Dan-yali-Akbar, or the Great Daniel, to distinguish it from the structure at Sus. Major Rawlinson is of opinion that Susan and not Sus is the Shusan of Scripture, though probably both places represent the *Susa* of the Greeks at different epochs.—(*Jour. R. Geog. Soc. Lond.* IX. 85, &c.) *Ahwaz*, on the banks of the Kuran, 50 miles S. by W. of Shuster, is a small, mean, and solitary town of about 1000 inhabitants, in the midst of a mass of ruins, the remains of what was a large city in the days of the Abbaside Caliphs. *Dorak*, on the banks of the Jerahi, a wretched collection of date-tree huts, surrounded by a mud wall, and containing about 6000 inhabitants, is the capital of the Chab district. *Hureeza* or *Hurreza*, on the Kerah or Kerkhah river, 85 miles S.W. of Shuster, is a considerable town, surrounded with a fortified wall, and contains a fort or castle. *Ram-Hormuz*, the ruins of an ancient city in a beautiful valley of the same name, 60 miles long by 6 or 8 broad, watered by the Jerahi, 100 miles S.E. by E. of Shuster.

FARS or FOUSISTAN, the original PERSIA, lies on the north-eastern side of the gulf, and extends towards Irak and Kerman. The northern and north-western portions of the province are rich in soil, and covered with wood and verdure, but contain scarcely a human inhabitant. The eastern portions are sandy and arid. The northern section, bordering on Irak, consists principally of rocky mountains, which enclose long narrow valleys, many of which afford excellent pasture to the herds and flocks of the wandering tribes who possess it, and even yield grain where the means of irrigation exist. The plain, which extends along the northern side of the mountain ous region, has a soil strongly impregnated with salt, and contains the great lake or Bakhtegan, with several of smaller dimensions. It would form a portion of the great desert, were it not separated from it by a series of ridges, extending east and west, between 29° and 30° N. lat., and enclosed to the north and south by two low ridges of rocky hills. This narrow tract, called the *Nemamaur*, produces some grain, and is particularly rich in fruit, some kinds of which reach great perfection. *Shiraz*, the capital, is situate in a plain 4284 feet above the level of the sea, on the *Rokna'ad*, a small stream, which empties itself into a salt lake. It has never at any time been remarkable for its splendour or fine buildings, but is renowned for its vines. Shiraz contains the tombs of Sadi, the moral philosopher, and Hafiz, the lyric poet, the Anacreon of Persia, whose works contain the most glowing allusions to the pleasures of Shiraz; but all is now changed. It had been for a long time rapidly falling to decay, and its ruin was completed by an earthquake in 1824. The town is about six miles in circumference, but great part of its area is covered with ruins. The houses are generally small, and the streets narrow and dirty. The ground has been raised, and the climate changed for the worse. The population is much reduced from its former numbers. Lat. 29° 37', long. 52° 41'; 220 miles S. by E. of Ispahan. *Kauzroun* or *Kazerun*, 50 miles W. from Shiraz, is a town of some importance, in a fine and well-watered valley, 2772 feet above the level of the sea; but its walls enclose more ruins than houses, and its population is only about 3000 or 4000. *Abu-Shehr* or *Bushire*, on the gulf, the principal sea-port of Persia, in lat. 28° 58', long. 50° 52', 120 miles W. by S. from Shiraz; population about 10,000. The harbour and roads are capable of containing any number of small native vessels and boats; but neither in the inner harbour, where vessels under 18 feet water may lie, nor in the outer roads, is there sufficient depth for vessels to anchor at a convenient distance from the shore, nor sufficient shelter to protect them against the prevailing winds. The town is built at the end of a sandy peninsula, and, from the anchorage, has rather an imposing appearance; but is really a mean and dirty place. The water near the town is brackish, but sufficiently wholesome. Ruins of *Shapur*, 7 miles N. of Kanseroun, once the capital of Persia, in a well-watered plain. Plain of *Merdusht*, 35 miles N.E. from Shiraz, contains the ruins of *Persepolis* or *Istakhar*, the principal part of which is called *Chilminar*, or the 40 pillars; also *Takht-Jemsheed*, *i.e.* the throne of Jemsheed. A few miles distant are remarkable excavated hills called *Nakshi-Roustan* and *Nakshi-Rejid*, which are supposed to be tombs of Sassanian kings. *Murghab*, 40 miles N.N.E. from Istakhar, contains numerous ancient remains, apparently coeval with those of Persepolis, and among them a building, generally considered to be the tomb of Cyrus, but called by the natives the Mosque of Solomon's Mother. It is in perfect preservation, but the body of the great conqueror of Asia is gone. The ruins which surround it are supposed to be those of *Pasargadæ*. *Darabghird*, a town with 15,000 inhabitants, 135 miles E. by S. from Shiraz; *Saza* or *Tesa*, 75 miles E. by S.; *Firozabad* or *Feruzabad* 60 miles S.; *Yezdikhast*, a considerable town on the borders of Irak, 140 miles N. by W. *Congoon*, on the coast,

east of Cape Verdistan, is said to contain 6000 inhabitants, who are subjects of the Imam of Muskat and carry on a considerable trade. *Beehaban*, 130 miles W.N.W. of Shiraz, is a large town 3 miles in circumference, and said to contain 10,000 inhabitants.

LARISTAN is a small province on the northern side of the gulf near its mouth. The lower part of it is an arid desert, with a surface diversified by rocky mountains and valleys of sand and salt; but the northern region contains a number of fine valleys, which produce dates and other fruits, and also grain. *Lar*, the capital, is a town of 12,000 inhabitants, with a castle situate on a hill, and contains the finest bazaar in Persia. *Asmloo, Nabend, Shewar, Nackiloo, Jezsar, Cheroo*, &c. are all towns on the coast of the Persian Gulf. *Furem*, and *Forg* are inland.

KERMAN lies to the east of Fars and Laristan, having the Persian Gulf on the south, and the great deserts on the north. It is exceedingly mountainous and barren, is destitute of rivers, and but for a few springs in the hills, and the subterraneous aqueducts, the inhabitants could not exist. Water is collected with extraordinary pains, and, after all, is not more than sufficient to irrigate a very trifling portion of the soil; although snow lies on the mountain tops during the greater part of the year. In the desert part of the province, the ground is so impregnated with salt, that sometimes not a blade of grass is to be found in a stretch of 90 miles, and not a drop of water. In the whole tract there is but one green spot, where the town of *Khubbees* was built, lat. 31° 40′, long. 58°14′, for the purpose of facilitating the trade between the northern and the southern provinces. But the town has gone to decay, and its inhabitants have become robbers. KERMAN, the capital, lat. 29° 51′, long. 56° 13′, 220 miles E. from Shiraz, 340 miles S.E. by E from Ispahan, stands in the centre of a large well-cultivated plain, and has a population of 30,000. The wool of Kerman is celebrated for its fineness, and its manufactures of shawls, felts, and matchlocks, are in request all over Iran. *Gambron, Gombroon*, or *Bender-Abasi*, on the shore of the Persian Gulf, once a flourishing commercial town, is now a collection of huts, inhabited by 3000 or 4000 Arabs. *Krook, Nuheemabad, Regan, Jumalee, Bumm, Teheroot*, all to the south-east of Kerman, in the district of *Nurmanshir*, the most fertile part of the province, a tract or series of oases, extending east and west 90 miles by 30, where the soil, consisting of a rich black mould, and watered by mountain streams, yields an abundant produce. *Rayun*, 40 miles S.E., *Killaheirtga* 70, and *Shuhri Bababeg*, the ruins of a once splendid town, in the midst of a profusion of the most prolific fruit gardens, 105 miles W. from Kerman.

SEISTAN, in the middle of the eastern border of the kingdom, is a small province, and consists of a desert of sand and rocks, through which the river *Helmund* or *Hermund*, from Affghanistan, flows into the sea or lake of *Durrah* or *Zurrah*. This lake is about 60 miles in length by 35 in breadth, and covers an area of about 1100 square miles. The water is slightly brackish, but abounds with fish and wild fowl. In the dry season it is shallow, and overgrown with reeds. In the middle of it is a fortified island named *Koh-i-zur*, where the chiefs of Seistan used to take refuge when their country was invaded. The province is now in the possession of independent wandering tribes, whose chiefs live in fortified villages on the banks of the Hermund, and are frequently engaged in plundering expeditions.

ISLANDS.—*Kharak*, in the Persian Gulf, 45 miles N.W. of Bushire, in 29° 14′ 45″ N. lat., and 50° 19′ 19″ E. long., is five miles long and two broad, with excellent water, and contains an old Dutch fort, and a good harbour. The soil is light and productive; millet, onions, cucumbers, grapes, melons, and figs, grow in great abundance. About a third part of it is cultivated. The island was recently taken possession of by a British force from Bombay. *Kishme, Kishm*, or *Jism*, called also by the Arabs *Jezirah-Tawilah* or *Jezirah Diraz* (*i. e.* long island), is situate at the entrance of the Persian Gulf, the 56° E. long. running nearly across the middle of it. It is 54 miles long, by 20 at its greatest breadth, and is separated from the mainland of Persia by *Clarence Strait*, which is three miles wide at its narrowest part, but expands to 13, and is studded with islets. The south side of the island is occupied throughout by a range of hills; the north side consists of arid plains and deep ravines. The greater part of the surface is sterile, and has in some places a crust of salt. The northern portion, however, is somewhat fertile and populous; the total population about 5000, are employed in fishing, cultivating the soil, and making cloth. They reside chiefly in villages and hamlets scattered along the coast. The only towns are *Kishme*, with 2000 inhabitants; *Laft*, and *Basidoh* or *Easidore*. The last named town is situate at the west end of the island, in lat. 26° 59′ N., and 55° 22′ E. long; and recently was the naval station of the Bombay squadron in the gulf, and the residence of its commodore. *Ormus* or *Hormus*, eastward from Kishme, near the north shore, under a lofty mountain called *Jebel Shamal* (Mount North), whose summit is clad with snow even in spring. Ormus is 12 miles in circuit, nearly circular, and its appearance from seaward is broken and rugged. The surface is destitute of soil, and the conical shape and isolated positions of the numerous small hills which cover it, give it a highly volcanic aspect. The harbour on the north-east side is secure and convenient; the fort is situate on a projecting point of land, separated from the main body of the island by a moat, and is still in good condition. There are no fresh-water springs in the island. The rugged hills which line the eastern shore, are covered at one part, to a considerable distance from their bases, with a crust of salt, in some places clear as ice, and in others partially covered with a thin layer of dusky red-coloured earth, tinged with oxide of iron, with which the whole surface of the island is deeply impregnated. Ormus once contained a splendid and populous city, one of the principal commercial settlements of the Portuguese, during the period of their dominion in the Indian Ocean; but the city has entirely disappeared. The island is now in possession of the Imam of Muskat, who farms it from the king of Persia, and keeps in the fort a small garrison. Population in 1827, when the island was surveyed, about 300, whose only employments were collecting salt, and fishing. *Anjar*, on the south side, and *Larek*, on the east side of Kishme, are small, sterile, volcanic-looking islands, the latter inhabited only by a few fishermen. The *Great* and the *Little Tomb (Tunb)*, two uninhabited islands, 24 miles S. of Basidoh; the former well stocked with antelopes. Along the coast northward are the islands of *Pelior, Keish, Inderabia, Busheab*, and *Kenn*.

RIVERS.—The rivers of Iran are few and unimportant. The *Kizilozan* rises in Azerbijan, and flows through Ghilan into the south-west corner of the Caspian Sea; in the lower part of its course it takes also the name of *Suffeid rûd*, or the White river. In Azerbijan it flows in so very deep a channel that its waters cannot be used for the purposes of irrigation, and it enters Ghilan by a deep gorge, which separates the Elburz from the mountains of Massula. This is the famous *Pass of Rûdbar*, about 30 miles long, through which the river dashes with incredible velocity. The *Tedjen*, in Khorassan, near Mushed, flows north-eastward into the desert, where it is lost. The *Zeinde* waters the valley of Ispahan, and flows through that city to the south-east, where it terminates in the desert. The *Kûr* or *Bundemir*, in Fars, runs into Lake Bakhtegan. The *Kuran* and *Jerahi* fall into the Persian Gulf. The *Haweza* or *Kerah* or *Karasu*, is an affluent of the Shat-el-Arab. The *Diala*, in Kurdistan, is an affluent of the Tigris. The *Gourgon* and the *Attruck*, both flow into the south-eastern corner of the Caspian Sea, to the north of Astrabad. The *Murg-ab* rises from the Paropamisan mountains to the north-eastward of Herat, and flows to the north-west, where it is lost, like so many others, in the Turcoman desert. The *Shiur-rûd*, in Kerman, flows into the Persian Gulf, opposite the island of Kishme. The names of Persian rivers sometimes terminate with the syllable *rood* or *rûd*, which signifies river.

CAPES.—*Verdistan*, in the Persian Gulf; *Bombarak* and *Gask*, on the coast of the Gulf of Oman.

AFFGHANISTAN.

The north-eastern portion of Persia, is bounded on the north by the ridges of the Himalayas and Hindoo-koh, and the Paropamisan mountains; on the south by Beloochistan; on the east by the river Indus; and on the west by Khorassan and Seistan; measures from west to east about 630 miles, and from north to south, 450; and contains an area of 240,000 square English miles.

Affghanistan is a congeries of high valleys and table-lands, which are separated by lofty mountains. The Hindoo-koh and Himalayas, which bound it on the north, appear, in some places, to form four distinct ranges, the most northerly of which is always covered with snow, though not of equal elevation throughout. In some places the range is surmounted by peaks of great height and size, which do not taper gradually to a point, but rise at once from their bases with amazing boldness and grandeur. The height of one of these peaks was ascertained by Lieutenant Macartney, in 1809, to be 20,493 feet. Koh-i-baba, a remarkable ridge with three peaks, in longitude 68° E., rises to 18,000 feet; it was crossed on the east side by Lieutenant Burnes, in 1832, by the pass of *Ooma*, the summit of which is 11,000 feet high; the pass of *Hajeeguk* is 12,400 feet; and beyond these lies the pass of *Kaloo*, which is 1000 feet higher. The secondary ranges decrease in elevation according to their distance from the main trunk; the tops of the highest are bare; but their sides and the whole of the lower ranges are well wooded. The minor ranges are covered with snow for several months in the year; their tops have few trees; but their sides are covered with forests of pine, oak, and wild olive. Lower down are many valleys, watered by clear streams, whose banks afford a profusion of European fruits and flowers, which grow wild, in the utmost variety, perfection, and abundance. The hills bear many pretty sorts of fern and similar plants, with several elegant shrubs; and even the rocks are rendered beautiful by the rich verdure of the mosses which cover them. This region is called the *Kohistan* or hill country. All the valleys of the range open ultimately into the great valley of the Cabul river, which extends east and west about 200 miles, and carries their waters to the Indus. The Hindoo-koh may be said to terminate westward with the Koh-i-baba, beyond which the range declines in elevation, and is lost in the Paropamisan or Ghor mountains, which extend about 350 miles east and west, with a breadth of 200, the whole space being a congeries of mountains of difficult access, and little frequented. They are so much lower than the Hindoo-koh, that no continuous line of perpetual snow can be traced among them. On the south side of the Cabul valley, to the west of Peshawer, the *Suffeid-koh* or White Hill, called also *Spenghur*, rises to the height of 14,000 feet above the level of the sea; and is only separated by the river from the projecting offsets of the Hindoo-koh. To the south of this mountain, a range extends through several degrees of latitude, forming the eastern limit of a mountainous country which reaches to the desert of Seistan; and the western limit of the basin of the Indus, to which it descends with a rapid slope, terminating in an arid plain, called the *Damin* or Skirt. The elevation of the range is considerable, but the Suffeid-koh is the only peak which retains snow throughout the year. In lat. 31° 39′ it forms the lofty mountain of *Cussay Ghur*, of which the Tukht-i-Suleiman (Solomon's throne) is the highest peak, which rises 11,000 feet above the level of the sea. Snow lies upon it for three months, and on the neighbouring mountains for two. To the westward are two smaller parallel ranges, both lower than the most easterly or principal range, the last of which, however, is intersected by valleys which open a passage to the Indus for the waters which rise between it and the second range. The latter thus forms the watershed between the Indus and the rivers which flow westward to the desert of Seistan, and throws out several branches in that direction, which form the high valleys of Pisheen, &c. The Sulieman or eastern range is described as being composed of a hard black stone; the next, of a red stone equally hard; and the third or most westerly, of a friable grey sandstone. Their summits are all bare; the sides of the highest range are covered with pines; those of the second with olives and other trees; but the lowest is quite bare, except in the hollows, which are overspread with thickets of brushwood. Westward from these mountains, the country gradually becomes more and more bare and sterile, till at last it terminates in the deserts of Seistan and Khorassan.

In the lower portions of the eastern valleys the summer heat is sometimes as great as in the hottest parts of India; but it does not continue so long, and is compensated by a much colder winter. In the western districts of the country, where the land is higher, the heat is less excessive. In the north, the temperature is various, as might be expected from the differences of elevation and from other circumstances. The low parts are hot, the middle temperate, and the high cold; but speaking generally, the average heat of the year does not reach that of India, nor is the cold so great as that of England. The north-eastern portion of Affghanistan participates in the Indian monsoons or rainy season; but they are here greatly modified, and very different from that incessant and drenching rain which prevails in the southern provinces of Hindostan. These periodical rains diminish to the westward, and in the valley of Peshawer the monsoon only appears in some clouds and showers; in the valley of Cabul it does not extend beyond Lughman; but in the southern mountains, called Coond, it forms the principal rain of the year; while, in the southern regions, it is felt as far west as the western boundary of Mekran. There are other rains or snows that fall about Christmas, which, in the greater part of the country, are of more value to husbandry. The monsoon rains are indeed less important than those of spring, which are said to come from the west. Candahar has a hot climate; no snow falls; and the little ice which forms at night on the edges of the streams melts before mid-day. To the north and east, as the country rises, the cold increases, and the communication between Cabul and Candahar is often interrupted by the snow. At Ghuznee the cold is sometimes excessive; and there are traditions of that city having been twice destroyed by falls of snow, in which all the inhabitants were buried. The prevailing winds are from the west.

Gold does not seem to be found in Affghanistan, except in the streams which flow from the Hindoo-koh. Silver is found in small quantities in the country of the Kafirs; and whole cliffs of lapis-lazuli overhang the river of Kashkar, to the north of the Euzofzye country. There are also lead, antimony, iron, sulphur, rock-salt, and alum, and indications of copper. Saltpetre is made everywhere from the soil. Silver, copper, iron, lead, antimony, lapis-lazuli, and asbestos are found in the mountains around Cabul, and the sand of the Kirman river is washed for gold. The most common trees on the mountains are pine, oak, cedar, and a sort of gigantic cypress; also walnuts, wild olives, wild grapes, and barberries; in the plains are found, the mulberry, the tamarisk, the willow, the plane, and the poplar; in gardens are roses, jessamines, poppies, narcissuses, hyacinths, tuberoses, stock, and other English kinds of flowers, and many of them are found wild. Lions are very rare, if found at all; tigers are found in most of the countries to the east of the Sulelman range, and these, with leopards, are to be met with in most of the woody parts of Affghanistan. Wolves, hyenas, jackals, foxes, and hares are common everywhere; bears are found in all the woody mountains; wild boars are rare; and the wild ass appears to be confined to the Dūranee country, Gurmseer, and the sandy country to the south of Candahar. Elks, and many kinds of deer are found in all the mountains; but antelopes are rare, and are confined to the plains. The wild sheep and wild goat are common in the eastern hills, which contain also porcupines, hedge-hogs, and monkeys, mungooses, ferrets, and wild dogs. The principal domestic animals are horses, ponies, asses, mules, camels, buffaloes, and humped beeves. The great

stock of the pastoral tribes consists of sheep of the broad-tailed species. The greyhounds are excellent, and are bred in great numbers among the pastoral tribes, who are very fond of hunting; pointers also are not uncommon. There are also cats, particularly a long-haired species called *Burak*, which are exported in great numbers, and everywhere called Persian cats, though they are not numerous in that country, and are never exported from it. Of birds, there are eagles, hawks, falcons, herons, cranes, storks, wild ducks, geese, swans, partridges, quails, pigeons, doves, crows, sparrows, cuckoos, magpies, and many other species. The snakes are chiefly innocent; the scorpions of Peshawer are well known for their size and venom, yet their bite is seldom or never fatal. There are no crocodiles; turtles and tortoises are common. Great flights of locusts are not of frequent occurrence. Bees are common, and musquitoes, which are less troublesome than in India.

The origin of the Affghans, and of the name by which they are designated, is uncertain. It is only through the Persian that the name is known to the people themselves, and it is probably of modern introduction. The name they themselves give to their nation is *Pushtun*, in the plural *Pushtanneh*, whence probably the name of *Patan*, by which they are known in India. They consider themselves to be descended from Affghan the son of Irmia or Berkia, a son of Saul, king of Israel. They call themselves accordingly *Beni-Israel*, though they consider the term *Yahudee* (Jew) as one of reproach. According to the native tradition they were transplanted by Nebuchadnezzar, after the overthrow of the temple, to Ghoré, a town near Bamean, and lived as Jews till the first century of the hejrah, when Khaleed converted them to Islam. The Affghans have all the appearance of Jews, and many believe them to be really the descendants of the captive ten tribes of Israel, but the matter is at the best very uncertain. They are divided into a number of tribes, which possess each a distinct territory, and continue in a great measure unmixed. Each tribe has branched into several divisions, and in the more scattered tribes, these branches have separated, and are each governed by its own independent chief; they retain, however, the common name, and an idea of a community of blood and interests. This operation of subdividing is repeated so often, that the last offshoot sometimes contains but a few families, with a chief who is subordinate to the leader of the division in which it is comprehended. Each branch has its common ancestor. The chief of a tribe bears the title of khan, and is generally elected by the people, who pay some attention to primogeniture, but more to age, experience, and character. The chief of a subdivision is always elected by the people from the oldest family which it contains, except in the lowest subdivision, where the superiority is often natural, as when an old man is the head of 10 or 12 families, formed by his sons, nephews, and grandchildren. The internal government of the tribes is conducted by the khans, and assemblies of the heads of divisions called jirgas. The khan presides in the principal jirga, which is composed of the chiefs of the great branches of the tribes. Each of these presides in the jirga of his own division, which is formed in a similar manner of the chiefs of the subdivisions, who again hold their jirgas. This system of government is, however, so often deranged by circumstances, that it is seldom found in full operation; and must therefore be considered rather as the model upon which all the governments of the tribes are formed, than a correct description of any one of them. The members of the tribes are naturally attached to the tribe and its members, but their attachment is rather to the community than to the khan; and though, in the opinion which they entertain of their khan, the idea of a magistrate set up for the public good is certainly mixed with that of a patriarchal and natural superior, yet the former impression will always be found to be the strongest. Accordingly, the power of life and death is rarely possessed by a khan, and it is but seldom that his personal interests would lead a tribe to take any step inconsistent with its own honour or advantage. An assemblage of many such commonwealths composes the Affghan nation. Each tribe has its own territory; and they may be arranged geographically in the following order:—Eastern tribes,—the *Euzofzyees*, *Otmankhail*, *Turcolanees*, *Kyberees*, the *tribes of the plain of Peshawer*, and those of *Bungush* and *Khuttuk*, all classed under the general name of *Berdúráni*, inhabit the north-eastern part of the country between the Himalayas, the Indus, the Salt range, and the Sulieman range. The tribes of *Esaukhail*, *Sheotooks*, *Bunnúses*, *Dower* and *Khústees*, are found in the neighbourhood of the Salt range. The *Dawhitkail*, *Meankhail*, *Babúrs*, *Stureani*, and *Gundepúr* occupy Damán. Central tribes:—*Jangees*, *Toorees*, *Jadrans*, *Vizerees*, *Minheils*, *Munakhail*, *Zimurrees*, *Sheranees*, *Spintereens*. Western tribes:—I. The *Dúrani* or *Dooraunees* possess a tract of country of about 400 miles in length by 120 or 140 in breadth, extending from Herat to the south-east of Candahar, where it appears to be bounded by the range of mountains called Kojeh-Amran, which is so high as to be covered with snow for three months in the year. To the south of Kojeh-Amran is *Pisheen*, a sort of valley or table-land, 80 miles from N.E. to S.W., its greatest breadth being about 40 miles, which is inhabited by the *Tora-Tereans*, who are closely connected with the Dooraunees both by descent and friendship. Their principal employment is agriculture, but a great proportion of them is occupied between Candahar and upper Sinde, in the business of carriers. II. The *Ghiljees* extend from the south-east of Candahar to the Kohistan or hill country, north of Cabul, and eastward to the heights of Jellabad and the range of Suleiman, occupying a tract of about 350 miles in length by 150 in breadth. To the south of the Ghiljees are the *Cauters or Kuukers*, whose country forms a square of about 100 miles, extending westward from the Suleiman range, and separated from Beloochistan by the pass of Bolan. They are divided into at least 10 clans, without any chief of the whole tribe. All the tribes above mentioned possess a country of their own, but the *Nassers* live in scattered parties, wandering in summer in the western deserts of Affghanistan, and proceeding in winter, in a collected body of 30,000, with their herds and flocks, into the warm region of Damán.

After the death of Nadir Shah, in 1747, one of his principal officers, Ahmed Abdallee, a Dúrani, fought his way to Candahar, where he established a kingdom, which subsequently included all Affghanistan and Beloochistan, extending westward from the Punjab and the Indian desert, to the deserts of Khorassan and Kerman, and northward from the Indian Ocean to the river Oxus. He was succeeded by his son Timúr Shah, and the latter successively by his two sons Shah Zeman and Shujah-ul-mulk, the latter of whom was the king who received the British embassy at Peshawer in 1809. Sujah was subsequently deposed, and expelled from the country by the brothers of his hereditary vizier Futtey-khan, of the Barukziya family, who continued to rule over Affghanistan till 1840, when the kingdom was recovered for Shah Shujah by the British forces from India, and virtually annexed to the British dominions. The king cannot be left alone to contend with so turbulent and independent a people as the Affghan tribes, and, according to present appearances, nothing less than the continued effectual aid of his foreign allies, will suffice to keep his family on the throne.

The northern parts of Affghanistan, including the hill country of the Paropamisan range, nearly all the way from Cabul to Herat, are occupied by the *Hazarehs* or *Huzaras*, a simple people, who differ much from the Affghans. In physiognomy they more resemble the Chinese, and have square faces and small eyes. They are of Mongol or Tartar descent, and one of their tribes is now called the Tartar-Huzaras. The Huzaras were subjects of the kingdom of Cabul, but latterly they have been almost quite independent, owing their independence and their safety to the natural strength of their country. They are mostly a pastoral people, partly Soonies and partly Shiahs. They derive their name from the Persian word *hazar*, a thousand, from being divided into innumerable tribes. Their subsistence depends chiefly on the produce of their flocks.

§ *Cities and Towns.*

CABUL or KABUL or CAROOL, is situate in a plain at the bottom of a kind of funnel formed by a high and irregular hill of gneiss which rises 1000 feet above it, and bends round it from south-east to north-west. The city is surrounded by a lofty wall with towers and curtains and a broad ditch; and, with the exception of a suburb, stands all on the right bank of the river, which is rapid and clear, but only 30 or 40 yards wide, and is crossed by four bridges. The houses are built of sun-dried bricks and wood, but few of them are more than two stories high. The great bazaar (*Chareháut* or *chowcháut*), is an elegant arcade nearly 600 feet long and 30 broad, and divided into four equal parts. There are few such bazaars in the East, and wonder is excited by the silks, cloths, and goods arrayed along its sides, and at the quantity of dried fruits, grapes, pears, apples, quinces, melons, &c., piled up in endless profusion. Each trade has its separate bazaar. A white jelly strained from snow, called *falooh*, and blanched rhubarb, called *rhiwarch*, are great favourites with the people; and the town is famous for its cubebs or cooked meats. The population amounts to 60,000. Tajiks, Affghans, Persians, Cashmerians, Hindoos, Turks, Beloochees, Arabs, Jews, Armenians, Siaposhkaffirs, and Kybarees; who all seem to converse in Persian as their mother tongue; but the Pushtoo or Aughan language is spoken in the neighbouring villages. At the foot of the eastern ridge is the *Bálá-hissar*, a fortified palace, surrounded by an old brick wall: and on the eminence above it is the upper *Bálá-hissar* or citadel, which overlooks the whole plain. The city stands about 6500 feet above the level of the sea; but the climate is genial. At noon in summer the sun is much hotter than in England, the thermometer generally standing at 94° or 95°; the evenings, however, are cool, and during the night the cold is excessive. The snow lies for five months in winter, several feet deep; and the prevailing winds are from the north. Cabul is celebrated for its fruit; its gardens afford a great variety of both fruits and flowers; and the people make a species of wine not unlike Madeira. The people are passionately fond of sauntering in the gardens; and in the centre of one of these, about a mile from the city, is the tomb of the chivalrous and philosophic Sultan Baber, the founder of the Mogul empire in India. His grave is marked by two erect slabs of white marble; and in front of it is a small but chaste mosque of simple and pleasing architecture. Near it are interred the remains of his wives and children. The gardens of *Lálaf*, in the valley of Kohdamun-mountain skirt, 25 miles N. of Cabul, are famous throughout Affghanistan. At the head of the valley, on its eastern side, the face of the hill, at one particular spot, is covered with fine sand, called *Reg-Rowan*, or the moving sand, which ascends about 200 yards up the hill, with an acclivity of 45°, and produces sounds when disturbed.

CANDAHAR or KANDAHAR, the western capital of Affghanistan, is situate in an extensive plain, bounded on the north and west by picturesque mountains, and watered by the river Urghand-ab. The city is of a square form, 3000 feet in circumference; is surrounded by a sun-dried mud wall 33 feet high, with towers and loop-holed battlements; and contains a citadel consisting of an inner enclosure 200 yards square, in the northern face. Streets lined with houses of sun-dried brick, start from each of the four principal gates, and meet in the centre of the city under the vast dome of a circular bazaar, called the Chuhar-soo, or four ways; all of which are filled with shops, and crowded with people from morning till night. The streets, however, are excessively filthy, and mendicity is to be seen in its most loathsome and repulsive forms. The mosques are neither numerous nor splendid. The finest building in the city is the mausoleum of Ahmed Shah Abdallee, the founder of the Pooraunee dynasty; an octagonal structure surmounted by a lofty dome. Candahar is the centre of a great trade between India and Persia; its population amounts to 60,000, of whom the greater part are Affghans. It is supposed to be one of the *Alexandrias* founded by Alexander the Great; but the present city is comparatively modern; the ruins of the older city are situate about three miles to the westward, at the foot of a range of mountains which bounds the plain in that direction. The climate is subject to great extremes; the thermometer, which sinks at night to 32°, ranges above 100° during the day, and in June and July the city is often visited by the fatal simoom from the western deserts.

GHUZNEE or GHIZNE, the capital of a powerful kingdom in the 12th century, is now completely in ruins; but there is a new town built at the foot of a long narrow ridge of gypsum, which rises a few hundred feet above the plain, and forms an irregular pentagon, with sides varying from 200 to 400 yards in length. The fortifications consist of a high rampart built on a scarped mound about 50 feet high, which, flanked by numerous towers, and surrounded by a fausse-braye and a deep wet ditch. About half a mile N. of the Cabul gate is the tomb of the iconoclast conqueror of Hindostan, Sultan Mahmoud of Ghuznee, in the midst of a vast enclosure of gardens and orchards. It consists of a low and plain marble sarcophagus, in a low-roofed building; at the head of the tomb is still preserved the mace with which he demolished the idol Somnath; and the cedar-wood gates of the building are those which he carried off from Somnath's temple, in Gujrat, seven centuries ago. Not far from the tomb are two very elegant and graceful minarets of brick work about 140 or 150 feet high, but considerably damaged.

PESHAWER is a large town situate in a rich and extensive plain, watered by the river of Cabul, and extending westward from the Indus. The town is upwards of 5 miles in circuit, but the environs exhibit little else than a vast space covered with ruins and tombs. The gardens which stretch from the south to the west of the city present the appearance of a forest of orchards, where the plum, the fig-tree, the pear, the mulberry, the pomegranate, and the quince are cultivated. Peshawer has the appearance of a very ordinary Hindoo town, but contains about 105,000 inhabitants, consisting of Affghans, Cashmerians, and Hindoos. Peshawer, as well as the neighbouring territory between the Indus and the mountains, which form the western border of its valley, are at present in possession of the Seikhs, who have built a substantial fort on the site of the Bala-hissar, or royal palace of Peshawer. *Jehangeerah*, 6 miles W. of Peshawer, is an insignificant place, in a healthy situation, containing 500 or 600 houses, and surrounded by a square wall. The *Kyber Pass*, between Peshawer and Jellalabad, extends about 30 miles in length, partly lined with precipices, and is completely commanded by the wild Affghan tribe of Kyberees, who either rob travellers, or make them pay for a safe passage. At *Kohat*, 24 miles S. of Peshawer, a paltry-looking town with 2,000 inhabitants, the Seikhs have erected a fort on the top of a scarped rock. Near it are naphtha springs which yield five gallons a-day, and sulphur mines. Descending the Indus from Peshawer are several important places on the right or Affghan side, as: *Kalabagh*, a town romantically situate in a gorge of the great salt range, the hottest place between Attock and the sea. It has an alum work, which employs about 300 people, and produces daily about 122 maunds. *Dera-Ismael-khan* is a new town well laid out, with straight and wide streets, in a country abounding with both the necessaries and the luxuries of life; 32° N. lat. The old town was swept away by the river in 1829. *Dera-Ghazee-khan* stands on the alluvial plain of the Indus, four miles from the river, 30° N. lat., and is surrounded by date groves, from the produce of which the Seikh government draws a considerable revenue. The town is admirably situate for trade. *Mittun* or *Mittunkote*, on the right bank of the Indus, near the junction of the Punjnud, is a town of 1500 houses. *Quetta* or *Kwetta*, a town of mud houses, surrounded by a mud wall, at the head of a fine valley, in the country of the Caukers, 170 miles S. by E. of Candahar. To the south-east of Kwetta, extends the *Pass of Bolan*, leading through the Kurklekkee hills, into Cutch-Gundava, with a steep descent, and of the most formidable description. Like the sea-beach, it is formed of loose pebbly stones and sand, and

runs in sharp angles from 150 to 200 yards in length, and gradually decreasing in width till it narrows to 20 or 30 feet, with perpendicular rocks rising like walls on each side.

Bameean (*Baumeean*), 60 miles W.N.W. of Cabul, is a singular place, situate in a valley to the north of the Hindoo-koh, on an affluent of the Oxus, and is celebrated for its colossal idols and innumerable excavations, which are found in all parts of the valley for about eight miles, and still form the houses of the greater part of its inhabitants. Altogether, they form an immense city, but none of them have any pretensions to architectural ornament. Bamean appears to be a place of very high antiquity. The gigantic idols, for which it is so famous, consist of two human figures, the one named Silsal, the other Shahmana, both of which are cut out in high relief on the face of a hill; the larger of the two is 120 feet high, and stands in a nich of 70 feet radius; the other is about half the size. Both are much mutilated, and their origin is quite unknown. The dominions of Cabul extend to the *Pass of Akrobat*, 15 miles N. of Bameen, leading through a wide belt of mountains, which are much lower than those to the south, and are free from snow when the others are covered. In the valley of Bameean are the remains of *Ghulghuleh*, a town destroyed by Zengis Khan, A.D. 1220. *Furrah*, 260 miles W. of Candahar, and 140 S. of Herat, is a town of 1000 houses, near the river to which it gives its name (Furrah-rûd), built under a single hill in the middle of the valley.—(*Conolly.*)

The principal river of Affghanistan is the Indus, which forms its eastern border. The others are:—the *Aboo-Seen*, which joins the Indus at Cabulgram; a river without a distinctive name, which joins the Indus at Attock, and conveys the collected waters of the valley of Cabul. Its principal affluents are, the *Kama*, *Kumeh*, or *Kuner*, which drains the hill country of Chitral, between the Hindoo-koh and the Himalayas; the *Lundye*, *Punjcora*, and *Goorband*. The *Helmund*, *Heermund*, or *Etymander*, which rises at Fazindaz, in the mountains of Pagman, near the Oona pass, and flows south-west and west into the Lake of Zurrah, after a course of 400 miles. Its immediate banks, and the country within half a mile or a mile of them, are everywhere fertile, and in most places well cultivated. Its principal affluents are, the *Urghandab*, *Khashrûd*, *Turnuk*, *Urghessun*, *Shorundam*, and *Duree*. The *Furra-rûd*, or river of Furrah, runs into the Lake of Zurrah, after a course of 200 miles. The *Lorah*, in Pisheen and Shorabûk, is lost in the desert, after a course of 200 miles. The *Gomul* drains the high valleys above the Suleiman range, through which it forces a passage; but its water is completely absorbed by irrigation, in the Damân, before it reaches the Indus. The only lake in the country is the *Ab-i-Standeh* (*i.e.* the Still-water), about 60 miles S.E. from Ghiznee; about three or four miles in diameter in dry weather, and about twice as much after floods. Its water is salt; and it abounds in ducks and every sort of wild fowl.

BELOOCHISTAN,

The remaining division of Persia, lies between Affghanistan on the north, and the Indian Ocean on the south, extending along the latter almost 600 miles, from Cape Jask to Ras Monsé, and comprising altogether an area of about 150,000 square English miles. The greater part of the country is mountainous, and especially its east and west divisions, which consist of two elevated table-lands. A large portion of it is entirely desert, being a continuation of the deserts of Kerman; and the sea-coast is covered by flat barren sands, which are destitute of water, and produce no other vegetation than date trees. The geology is almost totally unknown; gold, silver, iron, lead, copper, tin, sulphur, alum, nitre, rock-salt, sulphur, and naphtha, are found in different places. The climate is healthy, except in the maritime region of Mekran, where there are four seasons, two wet, one cold, and one hot; in the hill countries to the north there are also four seasons, corresponding with those of Europe. The principal vegetable productions are, the zizyphus jujuba, the timber of which resembles teak, palms, the tamarind, neem, peepul, maryo, walnut, and sycamore; and fruits of almost all the kinds known in Europe. Mekran is famous for its dates, Kelat, for almonds; and melons are produced of so large a size that a man is scarcely able to lift one. Lions and tigers are rare, but both are found on the eastern border; hyenas, wolves, and jackals, are found over the whole country; there are also wild dogs, which hunt in packs; leopards, wild cats, foxes, wild asses, antelopes, elks, red and moose deer, hares, mungooses, and mountain goats. Eagles, kites, and magpies, are found near Kelat; also water-fowl of various kinds, as herons, flamingos, bustards, patridges, lapwings, snipes, &c. Fish abound on the coast, where they form the principal food of both man and beast. Tortoises are common; but vermin and venomous reptiles are not so abundant as in India. The number of cattle is considerable; the sheep are of the fat-tailed kind; the cattle are chiefly of the black breed or buffaloes. The horses of Kelat and Cutch are large, strong, and bony, but vicious; but those of Mekran and Lus are small and spirited. Greyhounds and shepherd's dogs, of a ferocious kind, are both much valued; fowls and pigeons are the only domesticated birds. Except in Cutch-Gundava, which is fertile, well cultivated, and said to be capable of producing a sufficient supply of grain for the whole of Beloochistan, not a hundredth part of the country is cultivated. All the kinds of grain, however, which are known in India, are grown; also cotton, madder, and indigo, pulse and vegetables.

The people are almost equally divided into two distinct nations, the *Beloochees*, who are found in the west, and the *Brahoes*, who occupy the east. The former are desirous of being considered descendants of the Arabs, but do not resemble them in physical conformation, and are believed by Col. Pottinger to have been originally Seljukees. They are almost entirely a rude, nomadic, and pastoral people, living in tents, and moving from place to place with their herds and flocks. Their language is a corrupt dialect of the Persian. They are divided into three great tribes, the *Nahrooees*, the *Rinds*, and the *Murghsees* or *Murrees*, with numberless subdivisions. The Brahoes inhabit chiefly the district of Kelat, the Hala or Brahooick mountains, and their borders; the Rinds and Murghsees occupy the country of Cutch-Gundava; the latter are also scattered over Sinde. The Brahoes are inferior in personal appearance to the Beloochees; their habits are still more unsettled, but they are not so predatory, avaricious, revengeful, and cruel. The government of Kelat, when the British army marched into Affghanistan, comprised the provinces of Jhorawan, Sarawan, Mukran or Mekran, Lus, Cutch-Gundava, Hurrund-Dazel, Mustoong, and Shal. Shal, Mustoong, and Cutch-Gundava, have now been made over by the British Government to the King of Cabul. A people called Gewahrs, probably of Gheber descent, are found in different places, who speak pure Persian; Hindoos are tolerated, and monopolise most of the trade of the eastern provinces. The government was nominally under the khan of Kelat, but was really in the hands of the chiefs of the tribes. During the advance of the British army the Beloochees offered every opposition, by a continual series of predatory attacks; Kelat their capital has been in consequence taken possession of by the British troops; but, while we write, the Beloochees are said to be still in arms, and will probably not be soon subdued, as they can always have recourse to their deserts, or mountain fastnesses, where the regular warfare, for which disciplined troops are most available, cannot easily be carried on.

Cutch-Gundava, the best cultivated, and the most fertile part of the country, is properly within the limits of India, lying below the mountains which form the western border of the basin of the Indus, on the north-west frontier of Sinde. It consists chiefly of a plain, bounded by sandy deserts on the

north, south, and east, but watered by a number of streams which communicate with each oth canals. The face of the country is thus covered by water courses and streams, about four feet and as many deep, all having their sources in the Kala mountains. Two of these are entitl the name of rivers, namely, the *Nuree* and the *Kauhee*, which both flow from the mountains are lost, or entirely absorbed, before they reach the Indus. The soil is rich and exceedingly pr tive; the climate is oppressively hot in summer, when the country is occasionally visited by th tilential hot winds from the desert; and then becomes a white arid plain, presenting a cracked face like the dry bed of a marsh. In March 1839, the thermometer, in the tents of the British cers, stood at 111°. In the rainy season the low level parts of the province are converted i swamp of salt marshes. In winter the climate is mild, and the inhabitants of the western m tains and table-lands then resort to Cutch. The majority of the people are Jûts, but there ar a few Hindoos, who are engaged in trade. Villages are extremely numerous. The chief town *Gundava*, the capital, once a rich though mud-built city; but it was sacked and completel stroyed in October 1840, by the marauding Beloochees. *Dauder* and *Baugh* are also large tow mud houses, on the road from Shikarpore in Sinde to the Bolan pass. Dauder contained abou inhabitants, but has suffered the same fate as Gundava.

INDIA.

ASTRONOMICAL POSITION. — Between 7° and 35° N. latitude; and 67° and 97° East longitude.

DIMENSIONS. — The greatest length from north to south, or from the Himalayas in Cashmere to Cape Comorin, is 1870 miles; and the greatest breadth, from the Hala mountains in Sinde to the eastern extremity of Assam, nearly along the 27° N. lat. is about 1800 miles. The superficial area comprises about 1,250,000 square English miles, with a sea-coast line of 3622 miles.

BOUNDARIES.—The natural boundaries of India are remarkably well defined. The whole of the northern frontier is formed by the gigantic range of the Himalayas; and the southern, or more properly the south-eastern and the south-western boundaries are fixed by the Indian Ocean, into which the country extends with a wedge-like point. The eastern boundary is less regular. Commencing at the head of the valley of Assam, it may be drawn along the mountains which form the southern watershed of that valley, and then, turning to the south, it divides Arracan from Birmah, and terminates at Cape Negrais. The western, or north-western boundary is formed in like manner by the transverse range of mountains which commences at Ras Monzé, or Muaree, and extends northward to the Suffeid-koh, which again is separated only by the narrow bed of the Cabul river from the offsets of the Himalayas and Hindoo-koh. The Indus, however, has been usually considered the north-western boundary of Hindûstan; the sacred limit beyond which the Hindoos are forbidden to pass; and, in fact, the right bank of the river, and some portions even of the left, as in Sinde and above Attock, are inhabited by Beloochees and Affghans. The mountains beyond it may nevertheless be assumed as the natural geographical boundary of the region of India; for the narrow intervening strip of country has all the characteristic qualities of the Indian soil and climate; while the country on the other side of the mountains becomes at once a portion of the table-land of Iran or Eastern Persia. Nor could the free navigation of the Indus be preserved, were not both banks under the entire control of the same ruling power.

NAME.—The origin of the name of India is uncertain; it was formed by the ancient Greeks from the name of the river Indus or Sinde, which in their days was the eastern boundary of the Persian empire. Among the Brahminical Hindoos it bore anciently the general name of *Djambu-dwipa*, Island of the Djambu; and *Bharata-khanda*, the land of Bharata. The Hindoos divided it into, 1. *Ouditshya-desa*, North country; 2. *Madhya-desa*, Middle country; and 3. *Dackshina-desa*, South country. The first and the second divisions, corresponding with the modern Hindûstan, they considered as their true fatherland; beyond them every place was regarded as impure, an imputation which extended even to India itself to the south of the Vindhya mountains. In the ancient books of Zoroaster, India is called *Ferakh-khand;* and *Hindûstan*, the modern name of Northern India, or the region between the Himalayas and the Nerbuddah, is likewise Persian, being derived from the words *Hindoo*, black, and *St'han*, country, *i. e.* the country of the blacks; but it has for ages been adopted by the natives of all religions. Colonel Tod, however, says, that *Indu* is a name of Buddha, and that the appellation of the *Indû* or *Hindû* race is derived from the word *Induvansa*, one of the names of the descendants of Buddha, or the moon-race of India. — (*As. Jour. December* 1840, p. 234.) That portion of India, to the south of the Vindhya mountains, or the river Nerbuddah, has been generally called the *Deccan* or South Country; but the extension of this name, as well as of Hindûstan, is now considerably restricted.

GENERAL ASPECT. — The Himalayas extend along the whole of the northern and north-eastern frontier of India, with a continuous series of snowy peaks. From the crest of the passes through this chain, for 30, 40, or 50 miles southwards, the whole space is covered by immense snowcapt peaks, which are separated only by narrow intervening valleys. Another space of 30 or 40 miles is occupied by a very elevated region, consisting of mountains so lofty, as to have their summits covered with snow in winter, but embracing between their ridges high and narrow valleys, which are watered by mountain streams, and are generally inhabited and cultivated. The vegetable productions of this region are of the most remarkable stateliness, variety, and

beauty. Except at the summits of the mountains the trees are very large; and everywhere, and at all seasons, the ground is covered with the most beautiful flowers, which partly resemble those of India, but approach still more nearly to those of Europe. Along the south side again of this second region, is a lower belt of about 20 or 30 miles in breadth, covered with small hills which rise gradually towards the north, and are intersected by valleys, watered by numerous streams which have their sources among the loftier mountains, with which these hills gradually unite. The lower parts of this belt, with a portion of the adjacent plains, are the grand seat of the Salforests. In some places, particularly between the Jumnah and the Ganges, where the Sevalik hills form a belt, which rises from 1000 to 4500 feet, these low hills are separated from the mountains by fine valleys of considerable width, like the English *dales* or the Scottish *straths*; while, among the hills themselves, are many narrower valleys, resembling the *glens* of Scotland. Between this last or lowest ridge of hills, and the plains of Hindûstan, is a strip of country called *Tarai*, *Tarae*, *Turiyani*, or *Ketonee*, varying at different places from 3 to 20, or even 50 miles in breadth, and containing a few scattered small hills, and much poor high land overgrown with trees and shrubs, which are the haunt of elephants, tigers, black bears, hares, foxes, jackals, wild hogs, antelopes, and monkeys. It contains also much rich soil; but the whole district is so marshy and pestilential, that even the natives of the neighbouring country tremble to approach it; and, from April to October, the monkeys themselves, as well as the tigers and other wild denizens, and even the birds, are said to abandon this "belt of death." In Rohilcund the terai is separated from the plains by a low range of hills, crossed by numerous passes, some of which are practicable for wheel-carriages. The remainder is wholly open to the plains.

To the south of these mountainous and hilly regions, extend the great plains of Hindûstan, which are watered by the Indus, the Ganges, the Brahmapûtra, and their numerous affluents, and fall with a very gradual slope to the shores of the ocean, on the eastern and western sides of the peninsular part of India. Between the basin of the Sinde or Indus, which has been called *Sindetic India*, and the basin of the Ganges, or *Gangetic India*, is a ridge, or a series of ridges of hills, called *Aravulli*, which extend south-west and north-east more than 300 miles, with a breadth varying from about 6 to 60 miles, and a general elevation of 3600 feet. The Aravulli rise abruptly from the western desert, but fall gradually towards the east. Their general geological character is of primitive formation, and the summits of the diverging ranges west of Ajmere are quite dazzling, not with snow like the Himalayas, but with enormous masses of vitreous rose-coloured quartz. To the north of Komulmair, 25° N. lat., two of their divergent ridges form a continuous table-land, from 6 to 20 miles in width, as far as Ajmere, where it breaks up from the tabular form, and sends off numerous branches of low rocky hills through Jeypoor and Alwar, which reach the Jumnah in the vicinity of Delhi. From the south-western extremity of the Aravulli, several subordinate ranges of hills diverge to the north-east, and form a table-land, or series of high valleys at their angles, which slope towards the Jumnah. Further south, the *Vindhya Mountains* extend east and west, for about 350 miles, being separated from the Aravulli range by the valley of the river Mhye, and terminate eastward in a hilly region, which covers a large portion of Central India, and sends out branches as far as the Ganges at Chunar, Mirzapore, and Rajmahal, and even to the ocean at Balasore. The Vindhya mountains are scarcely so high as the Aravulli; but they rise very abruptly to their full elevation from the valley of the Nerbuddah, and form on their northern side the table-land of Malwah, which is about 2000 feet above the level of the sea, and slopes gently northwards; in which direction the Chumbul and other rivers carry the most of its waters to the Ganges, while a portion of them is conveyed by the Mhye to the Gulf of Cambay. Along the south side of the Vindhya mountains the long narrow valley of the river Nerbuddah extends in the same direction, beyond which is another nearly parallel ridge called the *Sautpoora Mountains*. To the south of these is the valley of the river Taptee, beyond which rises the *Chandore* and *Gawilghúr ranges*, forming the northern mountain border of the table-land of the Deccan.

The southern part of India forms a large triangular promontory or peninsula, projecting into the Indian Ocean, about 900 miles farther than the coasts of the Gangetic and Sindetic plains. Along the western coast of this peninsula, a range of lofty mountains, called the *Ghauts*, extends from near the mouth of the Taptee river to the valley of Coimbatoor, where they terminate with the *Nilgherries*, or *Blue Mountains*, which are the highest in the peninsula. The Ghauts rise very abruptly at the distance of about 30 or 40 miles from the coast, but form on their eastern side a table-

land, about 2000 feet above the level of the sea, which is rather undulating than flat, and is covered with numerous smaller ranges of hills, which slope eastward to the Bay of Bengal, towards which the country falls by terraces, and sends its waters. The northern part of the chain is less elevated than the southern, and seldom exceeds 3000 feet; between 17° and 18° N. the Mahabaleshwar hills form a table-land of about 4500 feet high; between 10° and 15° N. there are peaks of granite 5000 or 6000 feet high; in Coorg, *Podicandamale* rises to the height of 5682, and in no part of the country is there a summit lower than 5000 feet; farther south the Nilgherries reach the elevation of 8960. On the eastern coast of the peninsula a similar chain, named the *Eastern Ghauts*, extends along the borders of the Lower Carnatic and the Northern Circars, but at a greater distance from the sea than the Western Ghauts; it is not lofty, is less continuous, and is crossed by all the rivers which flow from the interior table-land. At their southern extremity the Eastern are connected with the Western Ghauts, and in the angle formed by the two chains, the table-land of Mysore, and that of the Balaghaut or Upper Carnatic, rise to the great elevation of 3000 feet above the level of the sea; the table-land of the Nilgherries reaches 7000 feet, and from these the country declines rapidly towards Coimbatoor. Northwards, the Eastern Ghauts terminate in an unexplored country, where their diverging ranges seem to cover a wide extent of surface. The highest part of the chain is about the latitude of Madras, where it rises to 3000 feet. To the south of the Nilgherries, which form, as it were, the terminating nucleus of both ranges, the valley of the river Paniany forms a gap of 16 miles wide; and beyond it, to the south, rises a group of mountains clothed with stupendous forests, and intersected by lovely valleys, which extends southwards nearly 200 miles, and may be considered as a continuation of the Ghauts. Within 30 miles of Cape Comorin this groupe terminates abruptly in a bluff granite peak, about 2000 feet high, from the base of which a low range of similar rocks extends southwards to the sea. Between the Western Ghauts and the sea, there is but a narrow strip of land, and the precipitous sides of the mountains which rise above it, are generally covered with forests of the tallest trees, and with impenetrable jungle. The lowland along the east coast is very considerably different, being a broad though unequal belt of country, many parts of which consist of alluvial plains formed by the deposits of the numerous rivers which flow from the table-land of the interior. In the sea these deposits are so distributed as to form a shelving bank, upwards of 100 miles in breadth along the coasts of the peninsula, which slopes so regularly that the number of fathoms of water is a sure indication of the distance from land.

But the most remarkable region is the Great Desert, which may be said to extend from the eastern base of the Hala mountains to the western base of the Aravulli, a distance of 350 miles; and from the Runn of Cutch northward to the Suttlej, upwards of 450 miles; comprising an area of 150,000 square miles, or about an eighth part of the surface of India. This desert is traversed in its western portion by the Indus, and in its eastern, by the Loonee; but, except along the banks of these rivers, and within the reach of artificial irrigation, it admits of cultivation only in a few places, and immediately after the rains. Between the Indus and the Loonee and the Aravulli mountains, the desert forms a continuous succession of sandhills, for a space of 450 miles in length, with a breadth varying from 50 to upwards of 100, intersected by valleys where scanty crops of grain are raised after the monsoon. The sand is a dust of the finest quality; the hills are covered with stunted shrubs and different kinds of vegetation till within a few months of the rainy season, when, in consequence of the herbage being burnt up, the sand is blown violently about by the wind, and the region is rendered almost uninhabitable. The surface has no covering of turf, nor any closely contiguous roots; but there are various kinds of plants, whose berries, leaves, or fruit are fit for food. Travelling through such a tract is difficult and disagreeable; camels and horses are the only animals which can cross it; hill and valley alternate, as if the surface had been troubled like the sea in a tempest, and left stationary in the midst of its fury. Wells, however, are scattered through the desert, and are generally found in the valleys, often in the bed of a tank, or in the hollows where the rain-water collects. They consist of small round holes, about a foot and a half in diameter, which are dug sometimes to the depth of forty or fifty fathoms, and lined with branches of trees. The rains which fall are slight and irregular, and are speedily absorbed by the thirsty sand. That portion of the desert which is destitute of wells is called *rohree;* and it would not be difficult to convert the whole region into a useless waste, by filling up the few which exist. This is not unfrequently done by some Rajpoot chief or other desperado, who, flying to the desert, fills up the wells to strengthen his position, and betakes himself to rapine and bloodshed. So far as it

has been hitherto examined, the desert lies upon a sandstone formation. Many large portions of it present the features of real solitude and desolation; but there are also numerous oases, where herdsmen pasture their flocks. In the direct line from Bhooj to Kairpûr water is abundant; and the country is traversed by low sandstone hills, which are thickly wooded. The desert is called by the natives *Thull*, *Thur*, or *Dhat*; but in the Hindoo geography it is called *Maroosthulli*, or the Region of Death. The people found in it are Bheels, and wandering tribes of Soda and other Rajpoots, Khosas, and Sindees; the first two tribes are the only permanent settlers, the others being attracted to it only after the rains, for the sake of the abundant pasture which it then produces. Of the whole surface of India it is reckoned that one third is covered by jungle or waste.

GULFS, BAYS, and STRAITS.—The *Gulf of Cutch*, between Cutch and Gujrat. The *Gulf of Cambay*, between Gujrat and the peninsula of Kattiwar. With the exception of the Bhagwa sands on the east side, between the Nerbuddah and the Tuptee rivers, the lower part of the gulf is clear of shoals, with irregular soundings of from 8 to 30 fathoms; but the upper part is filled with extensive shoals and sandbanks, intersected by deep channels, which are frequently shifting, particularly during the rains. The tides are extremely rapid, and their rise and fall very great. The whole coast is low, is overflowed for some distance inland at high spring-tides, and is intersected by numerous small creeks and inlets. The bore of the tide sets into the gulf like an upright wall of water, with a head of 4, 5, or 6 feet, each succeeding wave always decreasing, till the whole gulf is reduced to the level of the sea without. *Bombay* is an indentation of the coast of Concan, formed by the islands of Bombay and Salsette on the west, and contains several wooded islands. The *Gulf of Manaar*, which separates the southern Carnatic from Ceylon, is too shallow for large vessels, but has a sufficient depth for sloops and the craft of the country, which, by passing this way, avoid making the circuit of Ceylon. The gulf is closed to the north by a ridge of sandbanks, stretching 30 miles across, between the islands of Manaar and Ramiseram, the formation of which is very remarkable, being only about a quarter of a mile in breadth, and consisting entirely of sand, partly above and partly below water, which has been collected apparently by the surf and the currents, and is, so far as can be ascertained, unsupported by rock. On each side, at the distance of two and a half or three miles, the sea is six fathoms deep, and quite free of obstruction. There are three principal channels across it, which are passable by dhonies and fishing boats in fine weather; but the passage being difficult and dangerous, is not commonly used. The whole distance between Ceylon and the continent is 62 miles; but the only channels safely passable even by small vessels are one of one mile in breadth, between Manaar and Ceylon, and another of only about fifty yards wide, on the west side of Ramiseram. The latter is called *Paumbaun passage*; and for several years attempts have been made by the Madras government to deepen it, so as to make it passable for the larger vessels of the country. They have so far succeeded as to form a channel for vessels of 60 tons; and it is expected that a depth of 12 or 14 feet will be ultimately reached. The ridge itself is called by Europeans *Adam's bridge*; and is said by the Hindoos to have served as a bridge for their demigod Rama, when he invaded Ceylon. The channel to the northward is called *Palk's Straits*, from a Dutch commander who is said to have once passed through the bridge with a fleet. *False Bay* and *Balasore Roads*, between Point Palmyras and the Hoogly river. The whole of the east coast of India is destitute of harbours, and large ships are obliged to cast anchor at the distance of several miles from the shore, which slopes very gradually seaward.

CAPES.—*Jugput Point*, the western point, and *Diu Head*, the southern point, of the peninsula of Kattiwar, in Gujrat. *Boria*, a remarkably high bluff headland, on the coast of Concan, lat. 17° 20' N. *Ramas* or *Ramas*, a bluff headland, in lat. 15° 40' N., which projects so far from the line of coast as to form a bay on each side. *Maundilly* or *Mount Dilly*, lat. 12° 1' N., a hill separated from the coast of Malabar by salt-water creeks, and forming a bold and remarkable promontory. The bay on the south side runs three miles inland, with six fathoms water, and a fine bottom. A project is under the consideration of government to convert it into a harbour, by means of a breakwater. *Comorin*, the most southern point of India: the land at its extremity is low and flat, covered with trees, and not visible from a ship's deck for more than four or five leagues; but about half a mile inland is the mountain of Komari, 4000 feet high, quite smooth, and verdant to the very top. *Point Calimere*, the south-eastern point of the delta of the Cauvery. The *Dolphin's Nose*, at Vizagapatam, on the coast of the northern Circars, a lofty and steep promontory, rising abruptly to the height of 1600 feet above the level of the sea, which washes its base. *Point Palmyras*, the most easterly projection of the province of Cuttack. The *Sandheads*, the extremities of the sand-banks which which lie between Point *Palmyras* and the mouth of the Hoogly river.

RIVERS.—The INDUS is formed in Balti, or Little Thibet, by the union of two streams, the *Shayuk* and the *Sinh-kha-bab*, or river which rises from the lion's mouth. The latter is so called in reference to the Thibetan tradition, borrowed perhaps from the Hindoos, of the origin of four great rivers from the mouths of as many animals; as, the Indus from the lion's mouth; the Ganges from that of the peacock; the Sutlej from the elephant's; and the Sanpoo from that of the horse. The *Sinh-kha-bab* rises in the Kan-re, Kangri, or Kantesi mountains, the Kailasa or Cailas of the Hindoos, which skirt on the north the sacred lakes Manasarowara and Rawan-rhad, in the Chinese province of Chanthan. Flowing in a north-westerly direction, it receives at Tashigong a river from the valley of Gartopé, and pursues its course through Ladakh and Balti, receiving in its progress a number of large streams from both sides, the principal of which are the *Zanskar* or *Lingter*, to the westward of Leh, and the united stream of the rivers of *Pushk-yum*, *Kartse*, *Dras*, and *Shingo*, which drain the valleys to the north-east of Cashmere. The *Shayuk* has its sources in the mountains of Karakorum, between 77° and 78° E. long., and about 35° 40'-N lat.; it flows first for several days' journey to the south, and then turning almost at a right angle to the north-west, continues in that direction till, at Kiris, 20 miles E of Iskardo, it meets the Sinh-kha-bab. From Kiris the united stream flows westward for about 100 miles, receiving in its progress the rivers of *Shigar*, *Nagar*, *Hunz*, *Gilgit*, *Yasin*, *Hasora*, and other streams, and then turns to the south, breaking through the Himalayas in 74° E. long. From this it flows south-west among high mountains, where it receives the *Abu-seen*, and thence onward to Torbela, 40 miles above Attok, E.N.E., where it enters the valley of Chuch, spreading out and forming innumerable islands as far down as its confluence with the Lundye or River of Cabul, where it again enters a hilly country, and becomes so confined, that at Attok it is only 286 yards across, but very deep and rapid, with a current exceeding six miles an hour. Even when the river is lowest, the stream at the meeting of the Indus and the Lundye, and during its course through the rocks, is full of waves and eddies, and produces a sound like that of the sea; but, when it is swelled by the melting of the snow in summer, it forms a tremendous whirlpool, the roaring of which can be heard at a great distance, and which often swallows up boats, or dashes them against the rocks. The Indus itself is unnavigable above the confin-

ence, but the Lundye is navigable till within 50 miles of Cabul, from which point boats may drop down to the sea, a distance of 1200 miles, but not without danger; for, besides the obstructions already mentioned, the Indus, only 200 yards above the fort of Attok, gushes over a rapid with amazing fury, but afterwards passes on in a tranquil stream. At Nilab, 10 miles below Attok, the river enters again among hills, and continues to wind through them to Karabagh or Calabagh, 33° 7′ 30″ N. lat. The banks of the river throughout this distance are formed of hills which rise immediately from its waters in bold bluffs, or weather-worn slopes, at some places presenting mural precipices, at others rugged and broken, and casting dark shadows across the narrow river. Compressed by narrow banks, which are several hundred feet high, the sullen stream, when not obstructed, glides smoothly onward with a current of nine miles an hour, where its depth and velocity are greatest. From May till September the upward voyage through this gorge may be pronounced impracticable; but the downward voyage may be performed at all seasons, though not without risk, when the river is full. Below Karabagh it enters the rich valley of the Esau-khails in four great branches, and, except at Bukkur, where it crosses a low limestone range, is not again interrupted by hills till it reach the ocean, to which it flows first south and then south south-west, dividing into numerous streams, fertilizing a wide extent of country, and ultimately forming a delta, which presents a face of 125 miles to the sea. The inconstancy of the river in flowing through the delta is proverbial; its channels and branches are continually changing, new courses being formed, and old ones filled up, almost every season. The tide flows and ebbs with great violence, particularly near the sea, and ascends the river about 75 miles, overflowing the lower banks to a great extent. The course of the Indus is occasionally swept by terrific blasts, which, while they last, prostrate everything before them; but fortunately they give timely warning of their approach, and long before the storm bursts the careful tracker has moored his boat in some secure haven.

The principal affluent of the Indus on the right is the *Lundye* already mentioned, which is also named the *Cabul River*. Indeed, the river which joins the Indus from the westward above Attok has no distinctive name; it is formed by the streams which flow from the Himalayas, the Hindoo-koh, and the Suffeid-koh, into the valley which lies between them, the Lundye and the River of Cabul being perhaps the principal channels. But there is an affluent larger than any of the others, named the *Kama* or *Kameh* or *Kunar*, which forms the great drain of the elevated hill countries of Chitral and Kafferistan, situate between the Himalayas and the north-east prolongation of the Hindoo-koh, and has its remote sources near those of the Oxus. On the left the Indus receives also one great river, the *Chenab* or *Punjnud*, near Mithun-kote, 28° 54′ N. lat. This affluent is composed of five celebrated streams, the *Vedut*, or river of *Jelum*, *Jhylum* or *Jylum* (ancient *Hydaspes*), which drains the valleys of Cashmere and Garets; the *Chenab* (*Accines*); the *Ravee* (*Hydraotes*); the *Ghara* or *Beas* (*Hyphasis*); and the *Suttlej*, *Suttledge*, or *Sutudra* (*Hesudrus* or *Zaradrus*.) The first four have their sources on the south side of the Himalayas; but the Suttlej flows from the lake Rhawan-rhad, on the north side of the same chain, and its most remote source is said to be at a place named Chomik-Tongdol, where a small stream issues from the ground, and runs into Goorgoo lake, about 19,000 feet above the level of the sea, and 2000 feet higher than lake Manasarowara in Undes. It flows first in a south-westerly direction, till, on the borders of Kunawar, it is joined by the *Losar* or *River of Piti*, which drains the southern district of Ladakh, when it turns to the south, and enters India through a very deep valley between 77° and 79° E. long. At several places above Loodiana the Suttlej is fordable, but in general is so rapid as to be scarcely passable; below Loodiana there are no fords, and the river is said to be very deep. These are all very large navigable rivers, but being studded with shifting sandbanks, they are not equally navigable at all seasons, nor for all kinds of vessels; indeed the navigation of them can be considered practicable only by the boats of the country, which are flat-bottomed, and draw little water. Steam vessels could ply if built in the same manner, but no vessel with a keel could be safely navigated on them all. There is, says Lieutenant Wood, no known river discharging even half the quantity of water which is not superior for navigable purposes to this far-famed stream, the Indus. Till recently, the navigation, such as it is, was completely obstructed by political influences; these have been now removed by the extension of the British dominion to the Indus, and steam-boats ascend that stream, the Chenab, and the Suttlej, to Ferozepore and Loodiana. A survey has been made of the level between the Suttlej and the Jumnah, and the ground has been found favourable for a canal between Kurnaul and Loodiana, which would complete a circuit of nearly 3000 miles of inland navigation, from the Arabian Sea to the Bay of Bengal.

The GANGES, which is reckoned the principal river of India, is formed by the union of two branches, the *Bhagirathy*, which is regarded as the true Ganges, and the *Alakananda*; the former rises from a bed of snow above Gangoutri, at the height of 13,800 feet above the level of the sea, 79° E. long.; the latter rises above Badrinath, 79° 20′ E. long., and after having received the waters of the *Doulee*, *Pindur*, and other streams, unites with the Bhagirathy at Deo-prayaga. The Bhagirathy, or true Ganges, is considered peculiarly sacred, and is even worshipped as a goddess under the name of Gunga; the water of the river is reckoned capable of washing away all sin; and multitudes of pilgrims come from all parts of India to bathe in the stream, or have its water poured over them. It is peculiarly sacred at the confluences of five of its tributaries, four of which unite with the principal channel among the hills above Hundwar, and the fifth, which is the Jumnah, at Allahabad. The united stream, or Ganges, then flows on to Hurdwar, where it leaves the mountains, and enters the plains of Hindûstan, with a clear, beautiful, and rather shallow stream, having already fallen 12,000 feet below the level of Gangoutri. The river then flows with a winding course in a general direction south-east by east, receiving in its progress all the streams which descend the southern slopes of the Himalayas through 15° of longitude, and those collected from Central India by the Jumnah, the Saone, and others. From Hurdwar to Allahabad the Ganges is generally from one mile to 1¼ wide; farther down it becomes more winding, and its bed expands till it reaches its extreme width of three miles. Above Allahabad it is fordable in some places, but the navigation is never interrupted. At the distance of 500 miles from the sea the channel is 30 feet deep when the river it at the lowest; and this depth continues to the sea, where the sudden expansion of the stream deprives it of the force necessary to sweep away the bars of sand and mud which are thrown across it by the strong southerly winds, so that the principal branch cannot be entered by large vessels. About 200 miles from the sea, or 300 by the course of the river, commences the Delta of the Ganges. The two most westerly branches, named the *Cossimbazar* and the *Jellinghy rivers*, unite and form the *Hoogly river*, which passes Calcutta, and is the only branch commonly navigated by sea-going vessels. It is moreover considered by the Hindoos to be the Bhagirathy or true Ganges, and therefore held sacred. For the greater part of its course, from Calcutta to the sand-heads, the banks of the Hoogly are the most desolate that can well be imagined; and the navigation is rather intricate, owing to the frequent changes of the sand. From Jellinghy the main stream flows south-east, and throws off numerous branches, which form a labyrinth of rivers and creeks, inclosing a multitude of low islands covered with jungle, and named the *Sunderbunds*, which give an extent of 200 miles to the base, or sea-coast of the delta. In the dry season the mean rate of motion of the stream is less than three miles an hour; but in the rainy season the current runs five or six miles, and in some places even seven or eight. The Ganges and its branches form the great highways of Bengal and the upper provinces, along which all bulky commodities are transported, and it is said that so many as 300,000 boatmen are employed in this traffic.

The most important affluent of the Ganges is the *Yamuna* or *Jumnah*, which joins it at Allahabad,

after a course of 780 miles. It rises at Jumnotri, a little to the west of Gangoutri, 10,849 feet above t level of the sea, and flows southward, nearly parallel with the Ganges, at the distance of from 50 to miles. It is fordable in several places above Agra, before the beginning of October, and may be co sidered passable at any place above its junction with the Chumbul. Its affluents on the right ar the *Hansootee*, *Bungunga*, *Chumbul*, *Kohari* and *Ashin*, *Sinde*, *Jetara*, *Cane*, *Betwey*; the *Hind* on the left. The *Chumbul* has a course of 440 miles, rising near Maundoo in Malwah, and falli into the Jumnah 20 miles below Etawah. Its principal affluents are the *Sippra*, *Chota-Sind*, *Kal Sind*, *Newuj*, *Parbuttee*, on the right; the *Bunas* (termed *Kowarri* or the virgin), on the left. B tween the Jumnah and the Sutlej are several small streams, which are very important in a militia point of view. The *Khugor* or *Gagur*, and some others fall into the *Sursooty*, the termination of whi was long a problem; it is lost in the desert to the east of Bhutnere; but the Hindoos believe that proceeds under ground to join the Jumnah and the Ganges at the great prayaga of Allahabad.

The other principal affluents of the Ganges on the right, are: the *Tonse*, the *Sone* or *Soane*, t *Burra-nur*, and the *Dummooda*; on the left, the *Ramgunga*, *Gomutee*, *Tonse*, *Sarjoo* or *Gogra*, *Gu duck*, *Pogmutty*, *Coosy* or *Kosah*, *Mahananda* and *Purnubhah*, *Attri* or *Teesta*; all very large river

The BRAHMAPUTRA or BURRAMPOOTER, is supposed to have its origin in a lofty mountain ran somewhere near the 29° N. lat., and 97° 30' E. long. It flows westward through Assam till it rea the borders of Bengal, where it turns south, and reaches the sea, after a course of 1000 miles. In t higher part of its course it is also named *Lohit*, and, near its mouth, *Megna*. Its affluents are t *Dibong*, *Dihong*, *Dikho*, *Deesung*, *Boree-dehing*, *Noa-dehing*, *Debanoo*, all in Upper Assam; t *Bonsa*, *Champamutty*, *Gaddada*, *Tuveesha*, and *Manshi*, from Boutan; the *Teesta*, *Atri*, *Lubaee*, a others, between it and the Ganges. The only tributary of any importance is the *Dihong*, which joi the principal stream in 27° 45' N. lat., and 95° 25' E. long. It comes from the north, and its volu of water being about three times that of the Brahmapûtra, it is supposed to derive them from the Sa poo of Thibet; but the difficult state of its channel, which is full of rocks and rapids, and the impos bility of travelling on its banks have hitherto prevented a survey by European officers, for more th a few miles up the stream. The late mission to Bhotan (1838) were told by intelligent natives th the San-poo is the Brahmapûtra of Assam, and that, just before turning to the south, it receives river from the eastward from China. The Brahmapûtra is the largest river of India. It has a cour of 400 miles through Bengal, during the last 60 of which, before its confluence with the Ganges, i width is regularly about four or five miles; and but for the freshness of its waters, it might pass f an arm of the sea. Upwards it ceases to be navigable, except for canoes, at Soonapoor, about 20 mil E. of Sudiya, in Upper Assam.

The LOONY, LOONI, or LOONEE, has its sources in the sacred lakes of Poshkur and Ajmere, with more remote arm from Purbutsur, in Rajpootana, and has a course of more than 300 miles S.W through Marwar into the Runn of Cutch. It is the only channel by which the rain which falls on th western slopes of the Aravulli finds its way to the sea; but it is rather a torrent than a river; i stream is constant only during the rainy season. It has, however, pools of water in its channel, an affords an ample supply from pits or wells dug in its sandy bed.

The SABERMUTTY and the MHYE or MAHI both flow into the head of the Gulf of Cambay; the fo mer from Rajpootana, the latter from Malwah; but they are both great water courses rather tha rivers, their streams being almost dried up within three or four months after the rains.

The NERBUDDAH, NARBADA, NERBADDAH, NERMADDA, or NIRMADA, rises near Omercuntuc, i Gundwana, 2463 feet above the level of the sea, close to the source of the Soane. It flows at first alon a table-land; has a great fall near Mundlah; and then turning nearly due west, between the paralle ranges of the Vindhya and Sautpoora mountains, falls into the Gulf of Cambay. It has a course o 750 miles, with fewer windings than most Indian rivers; but it is obstructed by rocks, shallows, an cataracts. At Husseinabad the bed of the river is 900 yards wide, but much broken, and has thirtee fords within 14 miles of that town; but at Mandatta, 130 miles further down, it is not more than 1 yards wide, being confined between barren rocks, and very deep. The valley, for 300 miles abov Hindia, is only from 15 to 20 miles wide, the river keeping near the Malwah side; forests of dee jungle extend on both sides, and rise to the tops of the hills.

The TUPTEE or TAPTY rises near Beltoul, among the Injardy hills, and flows west with a ver winding course of about 503 miles into the Gulf of Cambay, below Surat. Its principal affluents ar the *Pourna* and the *Guirna*.

The CARAWOTTY rises in the table-land of the Deccan, to the east of Goa, and, after a windin course, falls into the sea on the west coast, between Carwar and Shedasheveghur. In leaving th upper country it forms a tremendous cataract several hundred feet high.

The CAUVERY rises in the hill country of Coorg near the coast of Malabar, 4000 feet above the level o the sea, passes through Mysore, Coimbatoor, and the Carnatic, and after a winding course of 45 miles falls into the sea below Tanjore by six principal mouths, which form a spacious delta. Ab Trichinopoly the Cauvery divides into two branches, which form the island of Seringham. About miles east these branches again approach, but the northern one is 20 feet below the level of the othe and they are prevented from uniting by a great *bund* or dam, which serves the southern branc through Tanjore in numberless channels, while the northern branch flows onward to the sea under th name of *Coleroon*. Its principal affluents are the *Henarutty*, the *Shimsha*, and the *Arraruttу* in Mysore and the *Noyel* from Coimbatoor. It is navigable only for small boats. Near the island of Sivana Samudra, 35 miles E.S.E. of Seringapatam, the river forms two cataracts of extraordinary grandeu named *Gungana-chuki* and *Burra-chuki*, the one 460 feet, and the other 350 feet high. The volume o water in the rainy season is very great, especially in the larger fall, where it rolls in one sheet over precipitous ledge of rock, with a fearful and stunning sound. These falls have been made easil accessible by roads and bridges, constructed by a public-spirited individual named Ram-Samy Mode liar, to whom the Rajah of Mysore gave a grant of the island, and by whom the jungle has bee cleared, and the land brought into cultivation. The source of the Cauvery is a place of devotion to th pious; and the spring is fabled to have been once a nymph of exquisite beauty. At its confluenc with the Kuniky, in Coorg, are three temples dedicated to the Hindoo triad.

The PENNAR rises in Mysore, which flows first N., then E. by S. into the Bay of Bengal, belo Vellore; the *Palar*, in the Carnatic, which passes Vellore and Arcot, and falls into the sea to the soutl of Sadras; the *Punnair*, which rises in Mysore, and falls into the sea at Cuddalore; the *Vellaur* passe Attoor, and enters the sea at Porto Novo, at the mouth of the Coleroon.

The KRISHNA or KISTNAH rises from the western Ghauts in the table-land of Mahabaleshwar, onl 80 miles from the west coast, and 4500 feet above the level of the sea, and flows S.E. into the Bay o Bengal, after a course of 650 miles. Its principal affluents are: the *Tungabudra*, formed by th *Tonga* and the *Budra*, *Wurda*, *Hugra*, and *Vedarutty*; the *Warna*; the *Gunga*; the *Gulpurba* the *Mulpurba*; the *Dhon*, a salt-water river from Bejapore; the *Beema* or *Bima*, which has a cours of 400 miles before it joins the Kistnah, receiving in its progress the *Moota-moola*, *Neera*, *Mann*, *Vai Goor*, *Kokuree*, *Seana*, and *Buree*; the *Dindee*; the *Pedda Wag*; and the *Musy*, which passes Hy drabad.

The GODAVERY rises in the western Ghauts, near the fort of Trimbuck, about 70 miles N.E. o Bombay, and flows S.E. into the Bay of Bengal, after a course of 850 miles. It enters the sea by tw principal branches, and several smaller streams, which form good tide harbours for ships of moderat

burden. Its principal affluents are: the *Para*; the *Sindhana*; the *Manhat*; the *Manjera*; the *Deedna*; the *Ghurk-Poorna*; the *Pranheeta*, formed by the *Whurda* and its affluent the *Pain-Gunga*, and the *Wyne-Gunga*, with its affluents, the *Khahan*, *Heeree*, *Atora*, and *Choolbund*; and the *Solair*.

The MAHANUDDY rises near Conkeir in Berar, and enters the Bay of Bengal near Cuttack by many mouths. The BERVORAH, formed by the *Brahminy* and the *Soank*, enters the Bay of Bengal under the name of MYPURRA, on the north side of Point Palmyras. The DOMRAH, formed by the *Byturny*, *Cogle*, *Salundy*, and others, also falls into the Bay of Bengal, a few miles farther north. The *Subemerka* or *Subunreeka*, rises in the district of Chuta-nagpoor, in Bahar, and falls into the Bay of Bengal, between Balasore and Injellee. It has a great fall at Hûrûrû-ghaut, near Kishenpore and Dounda in Chuta-nagpoor.

LAKES and MORASSES.—The *Runn* of *Cutch* is one of the most singular features of India. It is situate between the peninsulas of Kattiwar and Cutch on the south, and the Thur or Great Desert on the north; being about 190 miles in length, and 90 at its greatest breadth, and containing about 6500 square miles. In the dry season it forms a desert plain interspersed with diminutive shallow lakes, long ridges of barren sand, patches of verdant pasturage, a few fields susceptible of cultivation, and extensive sheets of salt crust spread over the insiduous surface, which is full of dangerous quicksands; but, during the monsoons it is covered with water, which flows into it from the Gulf of Cutch and the Loony river, and forms a dirty saline solution, which reaches up to the camels' girths in many places along the tract where it is crossed, between Bhooj and Buliari; the travellers finding rest, and their camels pasture in a little island named *Khari-cabu*. After the retiring of the waters again, myriads of dead prawns, mullets, and other fish are found strewed over the surface. The ground, when uncovered with water, is nowhere fenny or swampy, but is dry and sandy; and the limits of the Runn are as strongly marked as those between a gravel walk and the verdant lawn which it skirts. The traveller steps at once from a soil teeming with vegetation upon the bare and sterile ground. At some seasons the mirage is very prevalent in the Runn. On the banks, and in the small islands of the Runn, the wild ass, a handsome animal, but of untameable fierceness, exists in great numbers; apes, porcupines, and vast flocks of large birds share with him the possession of this dreary and desolate region. The lakes of India are few and of small dimensions. The *Chilka lake*, on the coast of Orissa, between Cuttack and the Northern Circars, is a shallow expanse, 35 miles long by 8 in breadth, separated from the sea only by a belt of sand. *Colair lake*, in the Northern Circars, is chiefly formed by the overflowing of the rivers Kistnah and Godavery, between which it lies. It is about 47 miles in length by 14 in breadth; from the beginning of July till the end of September it is covered with water, except about 60 or 70 small islands in which the inhabitants remain; during the rest of the year it is dry and passable, and in some parts highly cultivated. *Pulicat lake*, on the coast of Carnatic, north of Madras, is about 33 miles long, and 11 broad, contains several islands, and communicates with the sea by very narrow channels. *Sumber* or *Sambur lake*, in Rajpootana, 20 miles long, and 1½ broad. After its bed is filled with the rains, the water becomes strongly impregnated with salt, which, when the waters retire, is found crystallized in large masses under a layer of mud. It supplies with that article a considerable portion of Upper India. *Deedwannah* and *Sirr*, two other small salt lakes, also in Rajpootana. *Lunar lake*, 40 miles from Saulna, in the Neermal hills, is a vast crater 500 feet deep, and 4 or 5 miles round the edge; its water is green and bitter, supersaturated with alkaline carbonate, and containing silex in solution, with a portion of iron. The mud is black, and abounds with sulphuretted hydrogen; the water, nevertheless, is clear and without smell.

GEOLOGY AND MINERAL PRODUCTIONS.—The geological arrangement of the rocks is everywhere very simple, and a great uniformity prevails throughout the whole country from Cape Comorin to the Ganges; the same formation extending in many instances uninterruptedly for several hundred miles in one direction. Primitive formations, in which granite seems to bear the principal proportion, stretch, with few interruptions, from Cape Comorin to beyond Nagpoor and Ellichpoor, occupying a great part of the Carnatic, Malabar, and Mysore, nearly the whole of the Nizam's territory, and a large portion of Berar. They are also met with in many places still further north, in Malwah, Bundelcund, the Aravulli mountains, and the neighbourhood of Delhi, and occupy altogether about three-fourths of central and peninsular India. Primitive rocks form also the main body or nucleus of the Himalayas, and some of the highest peaks seem to be composed of granite. The flanks of the sub-Himalayas are covered with beds of concretionary sandstone, conglomerate, and loam. Between the Jumnah and the Ganges, these hills, there named the *Sevalik* or *Sewalick*, rise from 1000 to 4500 feet; and in their deposits are found immense quantities of the fossil teeth and bones of the elephant, mastodon, hippopotamus, rhinoceros, elk, ox, horse, deer, of several carnivorous animals, crocodiles, gavials, and freshwater turtles, with fluviatile shells, and remains of fishes. The remains of extinct species of the monkey and the camel have also been found. The great plains of Gangetic and Sindetic India are almost entirely composed of alluvial deposits, which are in many places, as in Bengal, several hundred feet thick. A great sandstone formation, commencing at the Rajmahal hills on the Ganges, stretches westward across the basin of the Saone, and through Bundelcund to the banks of the Nerbuddah, and appears again at Neemuch and Baug. In both of these districts, and in Malwah, it is frequently covered with a thin crust of grey argillaceous limestone, nearly destitute of organic remains, the general absence of which in the secondary rocks of India is remarkable. The Thur or Great Desert, to the west of the Aravulli mountains, also lies, as already mentioned, on a great bed of standstone. Tertiary rocks are found at the base of the first rise of the primitive rocks of the Himalayas, in the north-east of Bengal, where the Brahmapûtra issues from them at the passes of the Garrow hills. Various animal remains have been found among them; and nummulite limestone prevails at Sylhet. Enormous beds of trap rock or basalt have been traced all over Malwah, southward to Nagpoor, and the western confines of Hydrabad, thence to

the sea near Bankote, and northward to the Gulf of Cambay, covering an area of more than 200,000 square miles, and contributing very materially by their disintegration to the amazing fertility of that part of India.

Coal occurs extensively in the grits bounding the southern slope of the Himalayas, and in other places. The sites at present known are at Burdwan in Bengal, where the coal district extends for sixty miles along the bed of the river Damooda; at Rajmahal, Palamoo, Ridgeghur; the Towa river, Hoshungabad, Jubbulpoor, Sohagepoor, Chanda, and Mardanala, in the Nerbuddah districts; on the Mahanuddy in Cuttack; at Chirrapoongee in Sylhet; Assam; and at Sandoway and Kyook-Phyoo in Arracan. Fossil seeds carbonized have been found in Travancore; and lignite, in Kumaon, Moradabad, Cutch, and Peshawer. Coal has been traced from Burdwan to the westward across the valley of Palamow, and by Sohagepoor to Jubbulpoor, and the neighbourhood of Sak, and the Towa river, a distance of 420 miles. It is found nearly in the same latitude in Cutch, and eastward to the extremity of Assam, forming a great belt, which stretches from 69° to 93° E. long., and between 20° and 25° N. lat.; Chanda, on the Wurda river, Cuttack and Arracan being its southern boundary, while the vale of Callinger, the river Teesta, at the base of the Sikim mountains, and Upper Assam, form its northern limits. This valuable mineral has also been found at Hurdwar and Attok. In 1837, an extensive bed of fine quality was discovered in a range of low barren hills a few miles from Chunar. Several quarries of fine marble were likewise found in the same vicinity. *Fossil salt* occurs in large quantity in the salt range of hills which crosses the bed of the Indus, extending from the Suffeid-koh to the Jhylum; salt is also produced abundantly by evaporation in the Samber and other lakes of Rajpootana, and in the Sunderbunds on the coast of Bengal; and throughout Rajpootana a saline efflorescence covers the surface, occupying the dried beds of marshes and rivulets, and in appearance exactly resembling hoar frost. The inhabitants call it *reh*, and use it for making soap, an impure sulphate of soda, and other compounds. It consists principally of carbonate of soda, with associated sulphate of soda, and chloride of sodium, and is consequently a natron. *Iron* is found in the Carnatic, and is wrought with great skill, and to a considerable extent at Porto-novo and Nagore. *Gold* and *silver* have been found in Mysore; and particles of gold occur in the beds and at the mouths of the rivers of Southern Malabar. *Tin* and *copper* have also been found. *Diamond* mines are wrought in the district of Punah in Bundelcund, in a matrix formed of conglomerate, with quartzose pebbles; also at Heera Khoond, eight miles east of Sumbulpoor; and diamonds were formerly found also in the Neela-mulla mountains, between the Kistnah and Pennair rivers, in the extinct kingdom of Golconda. Rubies, chrysolites, garnets, amethysts, catseyes, and many kinds of carnelian, jasper, and agate, rock crystal, rock salt, and beautiful felspars are likewise found in many places. *Talc* is found in great abundance in the Mahabaleshwar hills, where it is used instead of glass, being cheaper and more durable.

The soil varies with the geological character of the country. In the deltas of the rivers it consists of a rich alluvium; and in the countries overlaid by the great trap formation, a stiff clay and tenacious surface, which is highly fertile when irrigated, prevails. But for more particular information on this subject, we refer to our subsequent topographical description of the states and provinces of this interesting country.

CLIMATE.—As a great part of India is situate to the south of the Tropic of Cancer, the climate of the low countries is tropical, and the year is divided into two seasons — the wet and the dry. Owing, however, to the great and abrupt elevation of portions of its surface, this country exhibits varieties of climate corresponding in temperature to those which are met with through every degree of latitude from the equator to the poles; so that, while the plains are burnt up by intolerable heat, some of the mountains which overlook them are clothed with everlasting snow. Between these extremes the climate is delightful; and the most favoured regions of southern Europe are rivalled at least, if not surpassed, in amenity and luxuriant productiveness, by the newly explored hill countries of India. The highest degree of temperature is found in the Thur, and other sandy districts near the level of the sea, as in the Northern Circars and the Lower Carnatic, where the climate is the hottest in India. Frost is never felt in the Deccan, nor in the countries to the south of it, except on the summits of the Nilgherries; but the temperature at Hydrabad is sometimes only 6° or 8° above the freezing point. In the table-land of Malwah, or Central India, the temperature is not only mild, but the range of the thermometer is unusually small, seldom falling below 72° in the night and morning, or rising above 76° or 77° at noon. After the close of the rainy season the mornings become cooler,

but the cold weather does not commence till December; when it continues during the whole of January and part of February. During the hot season which succeeds, the parching winds from the north and west, which prevail in most parts of Hindûstan to an intense degree, are in Malwah comparatively mild and of short duration. The thermometer, however, during the day rises sometimes to 98°; while the nights are invariably cool and refreshing. In the low countries, to the north and north-east, the climate is scarcely less hot than in the Carnatic. In the Thur, the thermometer has been seen to reach 112°; and even in the plains of Delhi, 5° north of the tropic, and 800 feet above the level of the sea, the ground is parched in summer, and the heat becomes intolerable to Europeans. Yet there, owing to the great radiation from the sandy surface, the cold of winter is sometimes 3° or 4° below the freezing point, and the tanks are entirely frozen over. In Upper India, the climate is generally dry, but is subject to considerable changes of temperature. During three months of the year, the hot winds blow like hurricanes from a furnace; but in the cool season the precautions against cold which are common in Europe are far from being unpleasant. Bengal is free from the great alternations of heat and cold to which the upper provinces are exposed; the climate is moist and humid; the hot winds are unknown, and during the cold weather no inconvenience is suffered; but the heat and the moisture together render the temperature very oppressive during the greater part of the year. The climate of India, even in the north-western provinces, does not permit the use of woollen clothes for more than five months in the year, and sometimes not so long. The spring, or dry season, throughout Gangetic India, lasts about four months, the heat gradually increasing till in May and June the thermometer rises to 100°, and frequently to 108° and 110°. The heat is occasionally modified by terrific thunder-storms, termed northwesters, which purify the atmosphere, refresh the soil, and give new life to the vegetation. Milder showers also occur, and partially refresh the air. In the north-western provinces a parching wind often blows from the west during the day in the hot season, which is succeeded at night by a cool breeze from the opposite quarter, and sometimes for a considerable time by easterly gales. The cold season, which follows the rains, continues from November till the middle of February, and during all that period the atmosphere is clear, and the thermometer ranges from 65° to 84°. In the Carnatic it ranges from 100° to 106°; and the cold season is of very short duration. In the low country of the Arcot district, during the hot season, the thermometer rises to 100° in a tent, and to 120° in the sun. At Madras, the average heat is less than at Calcutta, the mean temperature being about 80°. In January, when the temperature is lowest, the thermometer ranges about 75°, and seldom rises above 91° in July. At Coimbatoor, among the hills, the temperature in the cold season varies from 31° to 59°; in summer, it rises to 64°, 65°, or even sometimes 75°. Near Bangalore, it seldom rises above 82°, or falls below 56°. The hottest months on the west coast are April and May. At Cochin, the greatest rise of the thermometer in April is to 105°. At Bombay, it ranges during the year from 64° to 98°; at Surat, from 59° to 96°.

The most remarkable peculiarity of the Indian climate is the periodical changes of the wind, which blows alternately for nearly half the year in opposite directions. These are termed the monsoons, and blow from the south-west and the north-east; but it is in the southern or peninsular part of India that their effects are more particularly felt. On the Malabar coast the south-west monsoon commences about the middle of April, and continues till August or September, when it gradually loses its violence, and is succeeded by light variable winds. Towards the end of October, the north-east monsoon begins on this coast, and continues till April. On the eastern coast the south-west monsoon begins in the latter part of March, or beginning of April, but is not regular or strong till June, land and sea breezes being not uncommon in March, April, and May. Even during the three following months, when this monsoon is very steady, a land breeze often blows from shore for twenty-four or forty-eight hours. In September the south-west monsoon declines, and the north-eastern commences about the middle of October; from which time till the beginning of December navigation is rendered extremely dangerous, and a tremendous surf is thrown on the coast. During the prevalence of the south-west monsoon, the coast of Malabar is deluged with rain, in consequence of the clouds which it brings with it being intercepted by the lofty range of the western Ghauts, which protect, in a great degree, both the table-land of the Deccan and the Carnatic from its influence. The rains which fall in Mysore are not more than sufficient to preserve the verdure, and in the Mahratta country there is seldom heavy rain for any long continuance, particularly at the commencement of the season; and the country is in consequence but ill supplied

the natives), and otto or attar, of which only the weight of a rupee is produced from 200,000 bulbs. Along the coasts of the Bay of Bengal, the cocoa and areca nut palms flourish abundantly; of dyes, medicinal drugs, resins, gums, and oils, there are great varieties. Timber of all kinds is everywhere abundant; the forests are numerous and magnificent, and cover a large portion of the country. The maritime provinces produce teak, ebony, and many other species of trees; the interior produces the saul, sissor, bamboos, and sattans, with a great variety of plants which yield excellent materials for cordage. The northern and hill provinces yield at one season European grains, and at another those that are peculiar to the tropics. On the Himalayas, tropical trees entirely disappear at the height of 4000 or 5000 feet; the middle region, between 5000 and 9000, produces oaks, sycamores, elms, hornbeams, pines, barberries, roses, and honeysuckles, all of Indian species, but of European forms; and numerous saxifrages, crowfoots, geraniums, violets, gentians, primroses, and labiate plants. It is this belt also which produces the scarlet rhododendron; and, on its lower edge are found those camellias and tea-like plants which render it probable that the tea-plant itself might be cultivated in this part of India. The third and upper belt extends to an elevation unknown in any other part of the world. Trees of rhododendron and quercus lanata are first met with; to these succeed pines and various kinds of firs, some of which are splendid at the height of 11,000 or 11,500 feet; oaks in great variety; yews, birches, sycamores, and poplars, with roses, viburnums, and honeysuckles; above which follow patches of snow, with the Himalayan bamboo, creeping along the ground. To these succeed forests of quercus semicarpifolia; and the limits of vegetation are finally marked by a few starved yews and junipers, with primroses in the warmer situations, dwarf species of rhododendron, heather, and willow. The agriculture of this region is as singular as the vegetation; wheat is sometimes cultivated on the top of a mountain, and rice at its foot; maize, millet, and other small grains constitute the rain crop; capsicums, turmeric, and ginger, are grown as high as 4000 feet; wheat is cultivated as high as 10,000 feet, or even, according to Captain Webb, to the height of 12,000 feet. Cotton succeeds even at Kumaon. At Saharunpore, 30° N. lat., 77° 32′ E. long., 1000 miles from the sea, and 1000 feet above its level, the East India Company have established a botanic garden, where are collected in one place, and naturalized in the open air, the various fruit and other trees of very different countries, as those of India, China, Cabul, Europe, and America. But the most remarkable vegetable production of India is the banyan tree (*ficus Indica*) the branches of which send out shoots, which fall to the ground and fix themselves there, becoming in time large trunks, and forming a grove around the parent stem. A famous banyan tree has been often mentioned as growing on an island in the Nerbuddah; and one in Mysore is said to cover an area of 100 yards in diameter. — (*Boyle's Illustrations of the Botany of the Himalaya Mountains. Introduction.*)

ANIMALS.—India produces many of the most interesting forms of animal life. The elephant ranges wild in the deep forests and jungles of the eastern and southern provinces, and is domesticated throughout the peninsula, where it is still used to swell the gorgeous parade of the court, and to form the humblest of drudges. Wild elephants are particularly numerous in Assam, where they move about in large herds; and from 700 to 1000 are yearly exported from that province. Its huge rival, the rhinoceros, is also found in the thickest parts of the forests of Bengal, but has never been trained to any useful employment. The camel abounds in the sandy regions of the north-west, where it is used as the ordinary beast of burden. Deer, of many species and varieties, are found among the mountains and forests; also antelopes, wild boars, hyenas, jackals, foxes, hares, squirrels, porcupines, hedgehogs, and monkeys, the last being met with in great variety, and multiplied to a vast extent through the superstition of the Hindoos, who consider them as sacred animals. Bears abound in all the wooded mountains; wolves are also numerous in the northern provinces. The wild dogs of the Himalayas are remarkable animals, in form and colour like a fox, though larger; they hunt in packs, give tongue like dogs, have a very fine scent, and by force of numbers they are said at times to destroy the tiger. The buffalo, both wild and tame, is indigenous; one species, the *bos-arneé*, is noted for its great size and strength; the *yak*, or Tartar ox, is numerous among the Himalayas, where they browse in herds among ice and snow, and constitute, next to corn, the chief wealth of the inhabitants; there are also several species or varieties of beeves, the most common of which is the sacred humped species. The native horse of India is a small, ill-shaped, vicious poney; but fine horses in great numbers are imported from Arabia and Turkestan, and are bred in

the studs. The sandy deserts of Western India are the haunt of the wild ass, which roams in herds along the borders of the Runn of Cutch. In Southern India asses of several varieties are tamed for domestic purposes. The rat tribe abound; one species is of enormous size and very mischievous; some of the smaller species are also very destructive. The musk rat is only about the size of a mouse; and yet when it passes through a room it perfumes the whole atmosphere, and whatever it passes over become impregnated with the taste and the smell of musk. The goat of Cashmere has long been celebrated for its fine wool; and there are also other varieties of the goat. In the country of the shawl-goats some sheep's wool of very fine quality is also produced and no mutton is finer than that of the grain-fed sheep of the plains of India; but the native sheep are covered with hair instead of wool. Great attention has, however, of late, been paid to the introduction of improved breeds of sheep; the most decisive results have been obtained within the limits of the Bombay presidency, and, from the active measures taken to improve the fleeces, in the extensive pastoral country of the Deccan, the export trade in wool promises to be one of the most valuable and important for Bombay. But, of all the animals of India, those of the feline tribe are the most remarkable, as well for their beauty as for their size, strength, and fierceness. The lion is found chiefly in the northern provinces, near the borders of the plains, and in Kattiwar; but the tiger abounds in all the forests and jungles throughout the country, even up to the glaciers of the Himalayas, and is the grand object of pursuit with European sportsmen. Leopards, ounces, and panthers, of different varieties, are also numerous; one species of leopard, the chittah or cheetah, is employed for hunting wild deer. The ox and the cow are treated with great veneration and are even worshipped; and cow dung is used by the devotees to adorn their persons.

The birds of India are, in many cases, both splendid and curious. Those of the parrot tribe are the most remarkable for beauty, and for the variety of species. eagles are numerous among the Himalayas, also vultures, hawks, and falcons; many other birds are common, as herons, cranes, storks, flamingoes, pea-fowl, pheasants, geese, swans, partridges, quails, pigeons, gulls, plovers, wild ducks, and the common domestic fowls; the jungle-cock of India is believed to be the original parent of the common cocks and hens of Europe.

Reptiles are numerous; serpents swarm in the gardens, and even intrude into the houses; some are comparatively harmless, but of others the bite is speedily fatal. Water snakes are so particularly numerous along the coasts, that seamen used to ascertain their approach to land by the appearance of those animals. Alligators abound in the rivers and tanks, and particularly among the creeks of the Sunderbunds, along with a great variety of amphibious animals and fishes; the shark infests the mouths of the rivers, as well as the sea-coast, and grows to an enormous size. The best and most highly flavoured fish is the mango, which appears in the lower Ganges in June, and is reckoned a delicacy at the tables of Europeans, especially in the two months during which it is in roe. Mullet is plentiful in all the rivers; and there are also many other kinds of fish which we cannot attempt even to enumerate. The natives are dexterous fishers. Oysters, as well flavoured as those of Europe, but not so large, abound on the coast of Chittagong.

The insect tribes may be said to be innumerable. The heat and the moisture of the climate give incredible activity to swarms of noxious and troublesome insects; and to others of a more showy class, whose large wings surpass in brilliancy the most splendid colours of art. Musquitoes, moths, and ants of the most destructive kind, everywhere abound, to the intolerable annoyance of both Europeans and natives. The white ants destroy every sort of animal or vegetable substance, and the natives allege that they can even eat rupees. Clouds of locusts are also occasionally seen in the northern provinces. Among useful insects, is the silk-worm, the produce of which has long formed an article of commerce from India: the indigenous species are numerous; others have been introduced from China and Italy; and the greatest attention is now paid to the rearing and training of the worms, and to the preparation of the silk, the quantity and value of which are yearly increasing. Attempts have also been made to introduce the cochineal insect, but hitherto without the desired result; for, after a great deal of trouble and expense, the animals imported and multiplied over the country turned out to be of the wild species, and not of that which produces the finest dye. But the cactus on which they feed, will flourish in the most sterile parts of the country; and, as the experiment with the wild species was so successful, no doubt can be entertained of equal success with the *grana fina* cochineal, whenever it can be introduced.—*(Royle, Productive Resources of India.)*

PEOPLE. — Throughout the wide extent of India there is greater diversity of character and language, physiognomy, manners, customs, and occupations among the natives, than is to be found in the whole of Europe. The country contains at least thirty nations, speaking as many distinct languages, and all strangers to each other; and of each of these languages there are innumerable diversities of dialect. The inhabitants of India are in fact a very heterogeneous people; though they are generally considered as belonging to the Caucasian variety of the human race. In the form of the skull, the features of the face, and the proportions of the limbs, the Hindoos resemble Europeans more than the Persians and the Arabs; but their physical characteristics differ so much in different parts of the country, that no general picture would suit the various dissimilar races. Among the Rajpoots and northern mountaineers are often found men of gigantic stature and proportions; but, in general, the inhabitants of the plains are of shorter stature, and more slender form. They are, however, all of an agile graceful figure, and capable generally of enduring considerable fatigue. Few deformed persons are to be seen, but blindness is not uncommon. Their complexion varies from a dark olive, approaching black, to a light, transparent, beautiful brown, with still an olive tinge, like that of the natives of North Italy, or Provençe; nor does this variety of colour seem to depend entirely on climate. "Of the crowd," says Heber, "by whom we were surrounded, some were black as negroes, others merely copper-coloured, and others little darker than the Tunisines, whom I had seen at Liverpool. It is not merely the difference of exposure, since this variety of tint is visible in the fishermen, who are all equally naked. Nor does it depend on caste, since very high-caste Bramins are sometimes black, while Pariahs are comparatively fair. It seems therefore to be an accidental difference, like that of light and dark complexions in Europe, though, where so much of the body is exposed to sight, it becomes more striking here than in our own country." (*Journal*, I. 9.) Their face is oval; the forehead moderately large and high; the eyes and hair black; the eyebrows finely turned; and the nose and mouth have a European cast. The women, when not exposed to the weather, or stunted by hard work, are often very beautiful. Their forms are delicate and graceful; their limbs finely tapered and rounded; their features mild; their eyes dark and languishing; their hair fine and long; their complexions glowing; and their skins remarkably soft and polished.

The Brahminical Hindoos appear to have been divided, at some remote era, into four *tchadi* or *castes*, each of which had its peculiar privileges, duties, and laws. These were, 1. The *Brahmins*, priests; 2. The *Kshatryas* or *Khetris*, soldiers; 3. The *Vaisyas*, *Vice*, or *Bice*, merchants and husbandmen; 4. The *Sudras*, artisans, labourers, and servants. A notion has long been prevalent among Europeans, that the Hindoos are a race unsusceptible of improvement, in consequence of every trade and profession being confined to a particular caste, and each caste being placed within certain impassable limits or walls of separation. But this opinion is now ascertained to be very incorrect. If the fourfold division of castes ever existed entire in India, it certainly does not exist now, so far as occupations are concerned. Even before the time of their legislator Menu, more than 3000 years ago, an intermixture of the castes had taken place, and the mixed race thence arising were divided into a great number of new tribes or castes, to which, speaking generally, no employments are forbidden; and the subdivisions of these classes have further multiplied distinctions to an endless variety. "It appears, indeed," says Mr. Colebrooke, "that almost every occupation, though regularly it be the profession of a particular class, is open to most other classes; and that the limitations, far from being rigorous, do in fact reserve only the peculiar profession of the Brahmin, which consists in teaching the Vedas, and officiating at religious ceremonies." (*Asiatic Researches*, Vol. V. *As. Ann. Reg.* 1800.) We have thus the highest authority for rejecting entirely the doctrine that the whole Hindoo community is divided into four castes, whose peculiar prerogatives are kept inviolate by impassable walls of separation; and, instead of this, we find everywhere in the present day, a heterogeneous mass of people of all professions, without a single example in any particular state, or kingdom, or portion of the community, of that fourfold division of castes which has been so confidently insisted on. "I have myself," says Mr. Rickards, "seen carpenters of five or six different castes, and as many different bricklayers, employed on the same building. The same diversity may be observed among the craftsmen in dockyards, and all other great works; and those who have resided for any time in the principal commercial cities of India, must be sensible that every increasing demand for labour, in all its different branches and varieties of old and new arts, has been speedily and effectually supplied, in spite of the tremendous institution of castes; which we are

taught to believe, forms so impassable an obstacle to the advancement of Indian industry." (*India*, I. 32.) In short, the only one of the four castes which still preserves anything like a distinct existence is that of the Brahmins; but even of these, in Bengal alone, Mr. Colebrooke enumerates 168 subdivisions or families, with important distinctions among them. Even their sacred functions have been encroached upon; for the priests throughout India are not all Brahmins, nor are all the Brahmins, priests. According to the Abbe Dubois, the pontiffs and all the clergy of the sect of Siva, in Southern India, are Sudras; but the greater part of the high priests of Vishnu are Brahmins. Many of them engage in the employments of the lower castes; they are found professing almost every trade and calling, and even act as cooks in the kitchens of the despised but wealthy Sudras. Brahmins form a considerable proportion of the British Indian army; they are also usually the political and financial functionaries of the native princes; some of them engage in commerce; some are employed in the appropriate duties of their caste, in religious services at several of the temples, and in literary pursuits; but great numbers of them live by begging, it being one of their highest privileges to live by the industry of the lower classes. Whatever be their occupation they are generally an artful set of impostors. Till recently, the number of them who were respectable for knowledge was very small, while the great majority were devoted to ambition, intrigue, and sensuality; their character being disgraced by a degree of avarice, meanness, and cruelty, which inspired a stranger with no feeling towards them but one of contempt. The charity to which they give so high a place in the list of duties and virtues, has no human beings but Brahmins for its objects. Towards the other castes they cherish no feelings of humanity; but, on the contrary, claim everything from them, while they would give them nothing in return. The Brahmins, indeed, appear to have been originally foreigners in India. They have a tradition that the primitive seat of their ancestors was to the north of the Himalayas; and there we still find the most sacred of all the Hindû places of pilgrimage, the *Manas-sarowar* (lake of intellect), and the river *Brahmapûtra* (son of Brahma). Tradition relates that the descent of the Brahmins into India took place by the chasm through which the Ganges flows, and which is called the *Gomukhi* (cow's mouth, or more properly, water spring). This accounts for the very holy character which is ascribed to that great river.

The rest of the Hindoo community is composed of innumerable mixed tribes, not one of which can prove itself to be genuine Kshatrya, Vaisya, or Sudra. It is certain that the professions peculiar to these castes are everywhere usurped and practised by the mixed classes; and all the castes, except that of the Brahmins, are thoroughly intermixed. A real Kshatrya prince or soldier is not to be found; that caste has indeed long since disappeared, and the Brahmins allege that it was entirely extirpated by Parasu-Rama, the sixth avatar of Vishnu. All classes and castes now exercise the profession of arms; and Brahmins, Vaisyas, Sudras, and mixed castes, perform the functions, and hold the rank of princes and rulers, which, by the laws of Menu, belong exclusively to the Kshatryas. The Nairs, for instance, who are the hereditary soldiers and rulers of Malabar, and the warlike Mahrattas, who so long domineered over Hindûstan and the Deccan, are only Sudras. In like manner all the varieties of castes follow the allotted professions of the Vaisya and the Sudra, and practise, without distinction, every branch of agriculture, commerce, handicraft, and menial service. But, though the grand fourfold division certainly no longer exists; and, though people are at liberty to practise what profession or trade they please, without legal restraint, yet they are, nevertheless, so far divided into castes, as to follow very generally and exclusively the profession of their fathers, and do not readily engage in any other, unless from necessity or great temptation. So much does this feeling prevail, that the members of different professions may almost be considered as forming so many distinct hereditary castes; but, instead of *four* only, there are *many hundreds* of such castes, often distinguished by very trivial and even ridiculous customs and practices. "In the neighbourhood of Pûna," says Mr. Elphinstone, "where they are probably not particularly numerous, there are about 150 different castes."—(*Hist. of India.*) Nor do persons of different professions or castes readily associate with each other; they are always under the superstitious dread of coming in contact with something that will pollute them; and, as they thus live much estranged, the various classes come at last, through inveterate usage, not only to lose all mutual sympathy, but to consider each other almost as beings of different races or species, having no common sympathies, feelings, rights, or privileges. These feelings, however, have been of late years considerably modified, through the prevalence of European education and intercourse; and there are unequivocal

signs that caste will ere long fall into disuse, if not into contempt, among the educated classes. It is even alleged, that, were the matter enquired into, there would scarcely be found a single Hindoo family in the whole of Bengal whose caste has not been already forfeited by a violation of its laws; though, by mutual forbearance and connivance, they give each other credit for still possessing it, and though the higher orders still sometimes shew an insolent reverence for its rules. Still, of all these various classes or castes, the greater number are considered as more or less *pure*, and consequently entitled to a certain degree of respect and attention; but, beneath the lowest of the pure castes, there is a very numerous race of outcasts, amounting, it is said, to not less than one-fifth of the whole Hindoo population, to whom the higher classes deny the rights of humanity. These are generally called in the Carnatic *pariahs*, in some places *chandalas*; and, whatever may have been their origin, they exist now in the lowest and most deplorable condition. A person of pure caste is contaminated by entering a pariah's house, or eating food prepared by him; some even consider themselves polluted by the touch of a pariah. In the towns these outcasts are confined to separate quarters, and are employed in the meanest and most disgusting occupations. It is on this latter account that Europeans are ranked with pariahs by the *pure* Hindoos; for, like them, they perform indiscriminately all kinds of work, however impure; and eat, with equal indifference, all kinds of food, even that of the sacred cow. Yet even these degraded beings have, among themselves, distinctions of purity, which they observe as rigidly as the purest Brahmins. In Malabar there is a variety of outcasts called *poliars*, who are not allowed even to approach any of the higher castes. If a poliar wish to speak to any of these, he must stand at a prescribed distance, and call aloud; and when a violation of this rule occurs, the person polluted must purify himself by bathing and by reading the sacred books. Nor are even these the lowest; there is in the same province a still more degraded race, called *niadis*, who wander in small companies, and, when they see a passenger, set up a howl to warn him not to approach too near. Slavery, also, both prædial and domestic, prevails extensively throughout India; there is no law defining the extent of a master's power over his slaves; and the prohibition of importing them by sea, from other countries, has long increased their price, without putting a stop to the traffic. The slaves are generally kept in a very wretched state; and, in some places, as Travancore, the *Merramukhul*, or children of slavery, are so degraded, as to be connected in name with everything that is most revolting, shunned as if infected with the plague, spreading alarm and indignation among the higher classes by their presence, and even defiling towns and markets by their approach. The number of slaves throughout India is estimated at 10,000,000.

For a long time it was generally believed in Europe that the Brahminical Hindoos abstained entirely from animal food; but, like the doctrine of castes, this has been found to be a most erroneous notion, for they are scarcely less carnivorous than Europeans, and even the purest Brahmins are allowed to eat mutton and venison. Any person, not excepting even a Brahmin, eats readily the flesh of whatever animal has been offered in sacrifice; while, among all the lower castes, mutton, pork, venison, fish, everything, in short, but beef and fowls, are consumed as readily as in Europe. And though intoxicating liquors are prohibited by their religious codes, the prohibition is very generally disregarded by persons of all ranks, both Hindoo and Moslem. Many of them are very fond of liquor, and drunkenness is a common vice of their chiefs. Opium is also used to a great extent; among all classes *bang*, a preparation of hemp, is as common as their rice; and the most respectable Hindoos are seldom an hour without having a large piece of betel and chunam in their mouths. "On the whole," says Captain Ogle *(As. Jour. October* 1840*)*, "though the Indian, from the nature of his climate and constitution, can never become a drunken brawler, yet I should unscrupulously average the use of intoxicating drugs amongst all classes of society to be ten times greater than among the population of Great Britain." The poor, whose means will not allow them to procure animal food, consume rice, dhall, and other cheap grains, seasoned with salt, spices, and, if possible, a little fish. On the whole, however, the Hindoos are generally considered by other writers to be an abstemious and very temperate race. The character, indeed, of the Hindoos varies in different parts of the country, as much as the characters of the nations of Europe differ from each other. The Bengalees are weak in body and timid in mind, and are, in general, marked by the accompaniments of timidity, which are fraud and servility; and they seem to deteriorate in respect of bodily strength and mental capacity, as they approach the coast. The Hindûstanees of the upper provinces, above Benares, and particularly the Rajpoots, are a race of men, speaking generally,

not more distinguished for their lofty stature, which rather exceeds that of Europeans, and their robust frame of body, than for some of the finest mental qualities. They are brave, generous, and humane; and their veracity is as remarkable as their courage. The greater proportion of the Bengal army is composed of these Hindûstanees; and it is remarked that there are few corporal punishments in that army, the slightest reproach being felt as the greatest punishment. Such is the character given of the soldiers by Sir John Malcolm; and the character of those who follow civil pursuits is much the same as that of the soldiers, allowance being made for their different habits of life. The Hindoo on the coast of Coromandel is a weaker man than the Rajpoot; but even here there are among them many classes who are highly respectable. On the other side of India, the Mahrattas are much superior to the Bengalees, and even to those of the Carnatic.

Besides the Hindoos who profess the Brahminical faith, there are in India multitudes of people and numerous tribes, differing from each other in origin, religion, and habits of life; of these, as well as of the more noted of the Hindoo classes and races, we shall now endeavour to enumerate the principal.

Armenians, who, being expelled from their original country, and scattered over all the regions of south-western Asia, are also to be found in the principal cities and towns of India, following their usual employments of merchants and tradesmen.

Banians or *Banyans* is the name given to Hindoo merchants, as well in India itself as in the places where they are settled for the purposes of trade, along the coasts of the Indian Ocean. They do not form a distinct caste; but, like the members of other professions, are divided from their brethren by strong hereditary prejudices. They are generally mild and well-conducted, and many of them have very extensive mercantile connections throughout the cities of the East. Most, if not all, the Banians are Jains, and are distinguished for that tenderness for animal life which is the peculiar characteristic of the sect.

Batties or *Bhatties*, a predatory tribe in the desert, between Rajpootana and the Indus, remarkable for carrying on their depredations on foot, and still more for the length and rapidity of their incursions; but they have been latterly reduced to order.

Bhils or *Bheels* are an interesting race, considered by some as the remnant of the aboriginal people who were driven to the hills by the Brahminical Hindoos. They are found in the hilly parts of Gujrat and Malwah, and among the hills along the Nerbuddah and the Tuptee. Their habitations are of the rudest kind, and they are in other respects barbarians; but they have been nevertheless considered by some of those best acquainted with them to be generally a better, a nobler, and a more manly race than their Hindoo conquerors. Attempts have been made to wean them from their wild and lawless life, but hitherto without much success. There are among them a great many varieties, some being more civilized than others, among whom human sacrifices still prevail to a great extent. Some of them are even said to be cannibals, and to consider it a part of their religious duties to devour occasionally a member of their own family. They do not burn their dead according to the custom of the Hindoos, but bury them in the ground. They are very expert marksmen with the bow, which in their hands is a formidable weapon. They seldom or never commit aggressions upon the Europeans in their vicinity; and have never been known to abuse the confidence placed in their honour by young officers who sometimes go among them, for a few days' sport in their wild haunts; but they are not so scrupulous with the native servants who are sent among them on any duty.

Boamas, a sort of separatists from the Newars in Nepaul, who are supposed to amount to about 5000. They observe many of the customs of the Bhooteas.

Bohrahs, a singular sect of Mahometans, supposed to be of Arab descent, whose molla or high priest resides at Bohraunpoor, form a very large society, spread over the whole of the Deccan, and carry on an extensive trade. They call their sect Ismaeeliah, and derive their origin from one of the followers of the prophet, who flourished in the age immediately succeeding that of Mahomet.

Bhooteas, *Bhutiahs*, or *Booteas*, a people of Tartar descent, who possess Bootan, and are found along the hills as far as Kumaon. They are rather an undersized race, more remarkable for tension of sinew than for weight of limb; their features are purely Tartar; their persons are extremely filthy; they are, however, a very quiet industrious people. They shave their heads, and observe many idolatrous rites and customs.

Bringaries or *Brinjarahs*, and *Loodanahs*, are a sort of travelling merchants, who have no permanent residence, but live in tents, and trade generally in grain, with which they travel from province to province, or follow the route of armies, who in their fiercest contests consider these useful attendants as neutrals. They preserve a marked independence and separation from other races; and their dress and usages are peculiar.

Budhuks, a numerous fraternity of hereditary thieves, who inhabit the almost impenetrable forests which gird the northern border of Oude, and the banks of the river Chumbul. They have no fixed abodes, but live in temporary huts, and shift their residence with a rapidity scarcely credible. They do not willingly allow Mahometans to join them; but they have few Hindoo prejudices, feeding upon every kind of animal, and drinking spirits in large quantities. They speak a peculiar language. Like the Thugs, they are very superstitious, and pay great attention to omens. A great many robberies have been traced to them, and Government is now employed in putting them down.

Cherons, a race of Hindoos who employ themselves as carriers of heavy goods, such as grain, in which they also deal; they possess large droves of cattle for carriage. They are likewise sometimes engaged to protect travellers in the wild parts of the country, and take an oath to die by their own hands in the event of those who are under their protection being plundered. The superstitious thieves of India are always overawed by this threat of the Cherons, whom they hold in great veneration.

Coolies or *Kholies*, a manly and bold-looking, but very ferocious and troublesome people, who are found in Gujrat, among the wilds and jungles of the province. They used to be formidable for their robberies; but seem now, like their neighbours, to give promise of more peaceful conduct under their powerful masters.

Cossyahs, or *Kussyahs* or *Khasyas*, are found in the Khasya hills to the eastward of Bengal, and are a dark and scanty race, but strong and well-formed, and of greater stature than most mountaineers. Their character is peaceable and honest. Their women have handsome features, but are sun-burnt and toil-worn; and their ears and noses are deformed by heavy metal rings, which they wear as ornaments. The Cossyahs are very industrious.

Dawodpûtras, a tribe of Mahometans from the district of Shikarpore, who crossed the Indus in the reign of Aurungzebe, and wrested from the Sindees the lands which they now possess. Their whole number does not exceed 50,000; they are a fair and handsome race, and are subjects of Bhawul-Khan.

Dhenwars, the husbandmen and fishers of the western districts of the kingdom of Nepaul.

Garrows, a barbarous people who live among the hills to the eastward of Bengal. They are strong, well-shaped men, hardy, and able to undergo much toil, of a surly look, flat caffre-like noses, small eyes, generally blue or brown, wrinkled foreheads, overhanging eyebrows, large mouth, thick lips, round and short face. Their colour is brown, of different shades. They are of a mild disposition, honest, and faithful to their promise. They are more agricultural and industrious than the Kossiyahs, whom they resemble in warlike character, and excel, if possible, in muscular developement and bodily strength, though not their equals in external appearance and dignity of carriage. They go almost naked, and lead a very savage life. A Garrow's greatest treasure is as many human skulls as his house can contain; his greatest cordial, a pint of brandy; and his greatest dainty a pudding made by feeding a young dog with as much rice as he can contain, and then roasting him alive till the rice is cooked, when the entire mass is served up for eating. Their country is extremely fatal to Europeans. A branch of the same people, called *Hajirs*, who reside at the foot of the hills, are more civilized, and in religious matters partake more of Hindoo notions.

Gipseys, known in India by the name of *Bazighurs* (players or actors), are divided into seven castes, have all become Mahometans, and are found principally in the upper provinces of Hindûstan. They are pretty numerous, and are identically the same people as those found in Europe.

Goands, *Goonds*, *Khunds*, a savage people who occupy the wildest parts of Gundwana, to which they have given their name, between the northern Circars and the Bengal provinces. They bear a striking resemblance to the African negroes; and are in the lowest condition of savage life; their appearance is generally wretched, though some of their leaders are fine-looking men. They are blood-thirsty, cruel, and revengeful, and offer human sacrifices. Their country is mountainous, rising 2000 or 3000 feet above the level of the sea. The Goonds are a perfectly distinct race from the people of the plains, and speak an entirely different language. They are armed with bows, arrows, and battle-axes. Those who live in Goomsur have been recently reduced to subjection by the British Government.

Ghorkhas or *Goorkhas* are the dominant people of Nepaul, but are also found in the hill countries to the westward, which were recently subject to the Nepaul sovereigns. They appear to be descended from the Hindoos of the plains, who took refuge in the hills from the Mahometan invaders, but have been intermingled in blood with the Tartar and Chinese races, who seem to have been the original inhabitants of those regions. They are a hardy, brave, active, and enterprising people. In the British Indian military service there are several regiments or battalions of Goorkhas, who make excellent soldiers.

Gurungs, a pastoral tribe in Nepaul, who shift their abodes between the mountains and the valleys, with summer and winter. They adhere to the Lama priesthood and the Buddhist faith. They cultivate their lands with the hoe, are diligent miners and traders, and employ their numerous flocks in conveying their goods to market.—*(See Nepaul.)*

Jarejahs are the ruling class in Cutch, and are all more or less connected with the family of the Rao, from whom they hold their lands by military tenure. There are about 250 chiefs, who are termed the *Bhyaud* or brotherhood, and form the Rao's hereditary advisers. They are a singularly fine race of people, naturally robust, and peculiarly warlike in dress and bearing; but in their habits dissipated, proud, and cruel. They procure their wives from the Soodahs, a people who live in the Thur, and put their own female children to death, usually by means of opium applied to the mother's breast, or by drowning them in milk. They have numerous retainers called *Grasias*. The western part of Kattiwar is also possessed by Jarejahs, who migrated from Cutch 800 years ago.

Jariyahs, a numerous tribe, who inhabit the lower hilly region between the Kali river and the valley of Nepaul. They are now almost all converted to Hinduism.—*(See Nepaul.)*

Jats or *Jauts* are a numerous and turbulent race, who occupy great part of the north-west provinces. They appear to have migrated originally from Turkestan, and still retain the nomadic and warlike habits of the people of that region. Colonel Tod considers the peasantry of north-west India, as well as the Seikhs, to be chiefly composed of this people. The Jauts of Bhurtpore, who are descended from a low Sudra caste, but have assumed the title of Kshetri, or warrior, are distinct from the Jauts of the Punjab.

Jews are found in considerable numbers in Western India; many of whom are enrolled in the ranks of the Bombay army, and form good soldiers. There are two races or colonies of Jews at Cochin, distinguished as the white and the black. According to the missionary Wolff, those are called black Jews who became Jews of their own accord in Malabar, and these who are dispersed in the country, of black and half-black colour. They have neither priests nor levites, nor families nor relations in foreign parts. Their complexion is like that of the Hindoos. They consider themselves as slaves to the white Jews; they pay them a yearly tribute, and also a small sum for the privilege of circumcising their children, and for being allowed during the time of prayer to wear the frontlets. They do not sit in presence of the white Jews, nor eat with them; they are, however, richer, more industrious, and more moral than the white Jews.—*(Miss. Journal*, I. 478.) The Jews of Bombay are of a higher degree of respectability than in any other part of India; they call themselves Beni-Israel, and there is some reason to believe them descendants of the ten tribes, rather than of the later Jews.

Katkaris or *Katodis*, a people in the northern Concan, who live as outcasts near villages, and are held in great abhorrence by the country people, and particularly by the Brahmins. They derive their name from the occupation on which they are principally dependent for support, the manufacture of the *kat* or terra japonica from the khair tree or acacia catechu.

Katties inhabit Kattiwar, the peninsular part of Gujrat, and are reckoned one of the royal races of India. They are a half-civilized people, whose principal occupation formerly was robbery and piracy; but, now that their occupation is gone, their villages and forts are falling to decay, their country is covered with ruins, their power is broken, and their chiefs are in poverty.

Kookies or *Lunctas*, in the hills north-east of Chittagong, are regarded as the wildest of all the tribes on the eastern frontier.

Mahrattas, a numerous and powerful race, who originally occupied the north-western part of the Deccan. They rose to distinction in the 17th century, under their rajah Sivagee, and, during the 18th, were possessed of a great part of Northern and Central India. Their power was first broken by Ahmed Abdallee, king of Cabul, from whom they sustained a terrible defeat at Paniput in 1761; and they have now completely yielded to the British ascendancy. Their principal remaining chiefs are the Rajah of Sattarah, who is the descendant of Sivagee, the Maharajah Scindiah, Holkar, the Guicowar, and the Rajahs of Kolapoor and Sawuntwarree. The Mahrattas are generally of a diminutive stature, ill formed, and of a mean rapacious disposition. They are of low caste, and divided into three principal tribes, the Koonbees, the Dungar, and the Goalah, or the farmer, the shepherd, and the cowherd. There are certainly minute shades of difference among them, but no distinction of caste, for the genuine Mahrattas are all Sudras; and there are local circumstances which may prevent one family from intermarrying with another; but still every Mahratta can eat with his neighbour, unless he should have become an outcast, an event of no unusual occurrence. The Brahmins who live among them differ in their customs from their neighbours, with whom they will neither associate nor intermarry. The Mahratta language is widely spread, extending from Beder over the whole country to the north-west of Canara, and of a line, which, passing considerably to the eastward of Dowlatabad, takes an irregular sweep till it touches the Tuptee river, and follows the course of that river to the sea.

Mairs inhabit that part of the Aravulli mountains in Rajpootana called *Mairwarra*, or the region of hills, between Komulmair and Ajmere. They are a branch of the Mainas, one of the original tribes of India, and have lived for ages by robbery, being at constant war with their Rajpoot neighbours. They have yielded, however, to the British power, and give fair promise of becoming a civilised and industrious people.

Mararas inhabit a stripe of land on the coast from Cape Comorin to the north of Ramnad, their principal town. They are a people of considerable antiquity; and there appears some reason to conclude that they are the descendants of the rude tribes who inhabited the peninsula before the Hindoos colonized it, and introduced Brahminism, which they seem to have effected under the command of their celebrated hero or demigod, Rama. The Maravas have also been spread at different times, and in various proportions, through the Tanjore, Madura, and Tinnevelly provinces.

Mechis inhabit the forest portion of the Teral, from the Brahmapútra to the Konkinia in Upper Assam, a space 250 miles in length by 12 or 15 in breadth. They live entirely in the forest, without towns or permanent villages, and are remarkably healthy, notwithstanding the malaria, which is so deadly to strangers. They are Sivaites, but have no priests or temples, nor distinctions of castes, and no prejudices against strangers. They are industrious and honest.

Moplas or *Moplays* or *Mapellahs*, are the Moslem inhabitants of Malabar, and are a wealthy, intelligent, and enterprising race of people. They enjoy the greater part of the traffic throughout Malabar, and are exceedingly jealous of the interference of any other class in their occupation.

Moslems or *Mahometans* of India, are of various races, partly emigrants from the countries to the west and north, as Moguls, Tartars, Turks, Persians, and Affghans, and partly converted Hindoos. Those of foreign origin are considered as generally superior to the Hindoos; they have greater elevation of sentiment, greater energy of purpose, and dignity of character; they are more luxurious and dissipated, but decidedly more warlike, manly, and cultivated as a people. They are, however, very bigoted and fanatical, but harmonize, notwithstanding, very well with the Hindoos, who even assist in celebrating some of the Moslem festivals; and it is very remarkable that all the butcher meat consumed by the Hindoos is prepared, as far as regards the slaughter and cutting up of the animal, by Moslem butchers only. The Moslems are spread over the greater part of India, but are most numerous in Hindústan, or the upper provinces; they are also congregated in great numbers at Hydrabad in the Deccan. Their number altogether is estimated at about 15,000,000; and they are said to cherish a deadly hatred to their European conquerors, and to be always looking for an opportunity to throw off their yoke. The principal Moslem princes are the family of the Great Mogul, or Emperor of Delhi; the king of Oude; the Nizam, or king of Hydrabad; the Nabob of Arcot; the Nabob of Bhopal; and Bhawul Khan.

Mughs are the indigenous people of Arracan, and the most numerous portion, amounting to six-tenths of its present population. They are a hardy but inoffensive race, of a short muscular stature, with a copper complexion, and round flat features. They are Buddhists in religion, and though in many respects far from civilized, yet in others they equal, or even surpass the most polished nations. There is rarely one of them to be met with who cannot read and write. Their priests appear to be entirely occupied in the education of the children, and in every village there are two or three who are so employed. The Mughs, in their manners, are perfectly free from the servile hypocrisy of their western neighbours, and equally superior to them in probity.—(*Journal R. Geog. Soc. Lond.* I. 177.)

Nairs are the aristocracy of Malabar, who are divided into eleven ranks; they were formerly the hereditary soldiers of the country, but now engage in handicrafts. Though they are considered to belong to the Sudra caste, they are, nevertheless, a very arrogant race. They do not marry; and their families are continued by the children of their sisters.

Nayaks or *Nayakadias*, a wild tribe who inhabit the Passia, Chúmpaneer, and Oudipoor Jungles, between the Mhye and the Nerbuddah, with a breadth of about 50 miles. They are found chiefly about the centre of that region, and are much scattered towards the extremities, where various tribes of Koolies and Bhils, and a mixed Hindoo population predominate. They are very barbarous, and objects of the greatest terror to their peaceable neighbours. They worship Wagheshwar, the lord of tigers, and Maha, a malevolent female deity.

Newars, a people who originally occupied the more fertile part of Nepaul proper, before the Goorkha conquest of that country. They are generally of the middle size, of great bodily strength, with broad shoulders and chest, very stout limbs, round and rather flat faces, and open and cheerful countenances, but with little or no resemblance to the Chinese. They are peaceable, industrious, and even ingenious; their occupations are principally agricultural; but they are, besides, almost exclusively employed in the arts and manufactures of the country. The greater part of them are Buddhists, and are much attached to their religion; but they do not acknowledge the lamas of Thibet, and have priests of their own. They live in towns or villages, in houses built of brick, cemented with clay, and covered with tiles; they live on buffaloes, sheep, goats, fowls, and ducks, and are immoderately attached to the use of spirituous liquors.

Oorians are the aboriginal natives of Orissa, which derives its name from them. They are a timid people, and the men are so feminine in appearance that it is difficult to distinguish them from the women, both sexes dressing alike. They are exceedingly dissolute and obscene, and more versed in low cunning, dissimulation, and subterfuge, than perhaps any other people of the East. They are, however, honest and industrious.

Parsees, a numerous colony of fire worshippers, who left Persia to avoid the persecution of the Moslem conquerors, and have settled in Gujrat and Bombay. Their total number is about 50,000, of whom 20,000 are found in Bombay; the remainder are to be found chiefly at Surat, Baroach and its neighbourhood, the Northern Concan, and Ahmedabad. The opulent among them are merchants, brokers, ship-owners, and extensive land-owners; the lower orders are shop-keepers and artizans, and are in great request by European families as domestic servants, for they are much less intolerant in their principles than either Moslems or Hindoos, will perform a greater variety of work, and are more agreeable as domestics. The Parsees are divided into two classes, clergy and laity (*mobed* and *behdeen*.) The clergy and their descendants are very numerous, and are distinguished from the laity by wearing white turbans; but, excepting those particularly selected for religious service, they follow, like the laity, all kinds of occupations. They have a few plain churches, where they assemble for prayer; these are crowded daily by the clergy, but the laity attend only on certain days. They neither bury nor burn their dead, but place the bodies in open buildings, where they leave them to be consumed by the elements or the birds. The greater part of the wealth of Bombay is in the hands of Parsee merchants, who are a hospitable people, liberal but not extravagant in their expenditure. Their houses are often furnished in the European style, and they have adopted from their rulers many customs and habits still unthought of by the Moslems and Hindoos. Their women, though not jealously excluded from all society, are rather closely kept. Their charities are munificent; they relieve the poor and distressed of all classes, and maintain their own poor in so liberal a manner, that a Parsee beggar is nowhere to be seen or heard of. Their sacred books are written in the Zend and Pehlari languages, the genuineness of which is unanimously opposed by English authorities, who consider them inventions of the Parsee priests; while, on the contrary, the continental European scholars are equally unanimous in vindicating their authenticity.

Patans are people of Affghan descent, who inhabit different parts of Hindústan, and are the prin-

cipal people of Bhopal. Their name is believed to be a derivation or corruption of *Pushtoo*, the native name of the people whom the Persians call Affghans.

Pucharries are the inhabitants of the Rajmahal hills, and the hill country between Boglipoor and Burdwan, in the north-west of Bengal. They are quite distinct from the Hindoos in features, language, civilization, and religion; they have no castes, care nothing for the Hindoo gods, and are even said to have no idols. They are middle-sized, rather little men, but very well made, with remarkably broad chests, long arms, and well-formed legs, broad faces, small eyes, and turned-up noses; in other words, they are a short, thick-set, sturdy race, with the African nose and lip. They are an idle and dirty people, not fond of hard work, but orderly and loyal, and they hate and despise lying so much, that in the courts of law the evidence of a Pucharrie is always trusted more than that of half-a-dozen Hindoos.

Rajpoots (sons of kings), the noblest of the Hindoo races, are the dominant people of North-western India, which from them is named Rajpootana, Rajwarra, or Rajahstan. They are a tall, vigorous, and athletic race, with rude habits, and are devoted to war and robbery. They form the best soldiers of the Bengal army, though not quite so orderly and obedient to discipline as their comrades of the Brahminical and other castes. Their chiefs boast of a long line of ancestry, and are considered as of more illustrious birth and of higher rank than any other Hindoo princes. A sort of feudal system is established among them; the subordinate chiefs holding their lands on condition of military service. The Rajpoots pretend to be the lineal descendants of the lost Kshatraya, or royal and military caste; but the Brahmins deny it, and allege that they are sprung from the Vaisya caste on the paternal side, and from one of the mixed castes on the maternal. Yet the Rajpoots are, even more than the Brahmins, the representatives of Hinduism. In them are seen all the qualities of the Hindoo race unmixed, and displayed in the strongest light. They exhibit the genuine form of a Hindoo community, consisting of the most discordant materials, and combining the most extraordinary contrasts; unconquerable adherence to native opinions and usages, with servile submission to any foreign yoke; an unbelieving priesthood, ready to suffer martyrdom for the most petty observance of their professed faith; a superstition which inspires the resolution to inflict or to suffer the most atrocious barbarities, without cultivating any benevolent sentiment, or enforcing any social duty.—(*Sir J. Mackintosh; Memoirs*, I.) The poorest Rajpoot of the present day, says Colonel Tod, retains all the pride of ancestry, often his sole inheritance; he scorns to hold the plough, or to use his lance except on horseback. The Rajpoots are divided into thirty-six royal races all descended from the sun and moon, or the Surya and Induvansa races; and to each family or tribe is attached a bard, who is acquainted with all their peculiar privileges and customs, religious tenets, and ancient history. The great families use armorial bearings; and, in memory of their reputed ancestors, many of them wear round their necks badges of gilt metal, with the images of the sun and moon on horseback. They are extremely attached to their chiefs, to whom they yield a sort of feudal obedience. They hold their lands at low rents, on condition of military service, each village or township furnishing its contingent of horsemen on the shortest notice. Family feuds are frequent, and last for centuries. Hence murders, burnings, poisonings, mingle in their domestic annals with traits of generosity and romantic valour; and the modern Rajpoots differ little in their manners and prejudices from their ancestors.—(*Annals of Rajahsthan*, I. 3.) The Rajpoot states were first brought within the pale of the British ascendancy in 1817; but their turbulent disposition, and their impatience under the yoke of what they consider ignominious treaties, have kept them in a state of continual anarchy and revolt. Their extravagant dissensions, and endless disaffection, have at last made the British Government subject them to an active political superintendence; but no measures have yet been taken to institute among them regular forms of government; and, although they have been taught to acknowledge the British supremacy, and to feel their own weakness, they have hitherto been permitted to indulge in all the excesses of internal discord, and futile animosity. Yet, amidst all their social disorganization, lie concealed the elements of national worth and greatness, with qualities which may be wrought into the elements of future prosperity. The opening of the Indus, and the consequent extension of trade, accompanied by the gradual progress of knowledge, will be of importance in purifying the noxious atmosphere of Rajpoot feelings and politics.

Ramoossies, a predatory tribe in the neighbourhood of Poonah and Sattarah, have great faith in destiny, and live in little or no fear of law or punishment. They are worshippers of the *lingam*. Oomiah, one of their principal, most adventurous, and most successful chiefs, was tried at Poonah, and hanged in 1832.

Rohillas, a numerous people of Affghan descent, who possess the country east of Delhi, but are now wholly subject to the British Government. They are also called *Patans*, and are professors of Islam. They are a tall, handsome race, and, compared with the southern Hindoos, are of fair complexion; they are a clever and animated people, but devoid of principle, false, and ferocious. Crimes, both of fraud and violence, are very numerous, and perjury is almost universal. Rohilcund is infested with a crowd of lazy profligate *suwarrs*, or gentlemen, who, though not possessed of a rupee, conceive it to be derogatory to their gentility and to their Patan blood, to apply themselves to honest industry. They prefer living on the tradesmen and farmers, or existing as hangers-on to the few noble and wealthy families that yet remain in the province. The Rohillas were originally a band of Patans or Affghans, who came into Hindóstan about the year 1720, in quest of military service, and soon after made themselves masters of the district which bears their name, and where they rose to considerable power and influence. But their combined forces were completely defeated by the British at the battle of Cutterah or Kuttrah in 1774, an event which terminated the Rohilla sway; and nearly the whole of Rohilcund was ceded by the Nabob of Oude to the British government in 1801.

Sikhs or *Sikhs*, a religious community which, after the downfal of the Mogul empire, rose to great political power, and now possess the whole of the Punjab, and some adjacent territories.—(See *antè*, p. 126.) Their fatherland is the Doab or peninsula between the Ravee and the Suttlej; but few are to be found 30 miles below Lahore. There are none westward of the Jhylum; and even to the eastward of Lahore, where they are most numerous, they do not form one-third of the population. They are a robust and athletic race, with sinewy limbs, and tall stature. The genuine Kalsa or Singh knows no occupation but agriculture and war. They are, however, very tolerant; they have no prejudices of caste, nor are they averse to fermented liquors; but hold tobacco in abhorrence.

Shekhawutties, a tribe of predatory Rajpoots, living in the desert north of Jyepoor, have been recently reduced to order by the British Government, after a great deal of trouble and harassing petty warfare.

Soodahs, a rude people of noble, or perhaps Rajpoot lineage, who live in wandhs or grass huts in the Thur or great desert, in a state of peculiar privation and misery. They are by profession shepherds, but frequently commit forays on their neighbours. They find, however, their principal source of wealth in the beauty of their daughters, for one of whom a rich Mahometan will sometimes pay 10,000 rupees (£1000); and they also furnish wives to the Jarejahs of Cutch.

Tudas, *Tudavers*, *Thudavers*, or *Todevies*, a small tribe who occupy the highest valleys of the Nilgherries. They are tall, athletic, with a bold bearing, and long black hair, Roman noses, and large full eyes; they live in patriarchal simplicity, raising no grain, nor rearing any domestic animal but the cat. Their wealth consists in herds of buffaloes; their principal occupation is to tend and milk their herds, and prepare the milk for use or exchange; and the little commerce they carry on is in

butter, which they exchange for grain. They dwell in families, in small clusters of huts, migrating from place to place, according to the convenience of pasturage. They are strangers to war, and have no weapons of attack or defence, yet their demeanour is hardy and fearless; they are strictly honest, and, without fastening their doors day or night, live in perfect safety. They are ignorant of the mythology, language, learning, and manners of the Hindoos; their temples are dark hovels, in which a little shining stone is the only object of worship. They are certainly an idle race, but are not apathetic. They have no civil or political government, but yet are quite orderly. They are highly respected by the other people of the hills, who, though richer, more numerous, and more civilized, look upon the Tudas as a superior class, appeal to them in their disputes, and pay them tribute; their whole number is said to be less than a thousand.

Thugs or *Phansygars*, a singular class of professional murderers, do not form a distinct tribe or sect, but rather a confederacy, consisting of both Moslems and Hindoos. They have been found chiefly in Central India, on both sides of the Nerbuddah; but used to spread themselves over the country in all directions for the purpose of plundering travellers and others who came within their reach; always murdering them by strangling them with a noose, and carefully avoiding bloodshed. They were devout worshippers of the goddess Bhovani (Kali), and were directed in all their proceedings by omens, which they believed to be sent by her for their guidance. They generally travelled in parties, and consisted of people of all sects, the Moslems amongst them assuming Fatima, the daughter of their prophet, to be the same person as the Hindoo Kali. A few years ago the Thugs attracted the particular attention of the British Government, who are now employed in putting them down, and in endeavouring to extirpate so mischievous a brotherhood. Many most appalling atrocities have been brought to light; many hundreds of the gang have been hanged, transported, or imprisoned; yet the survivors, such is the force of superstition, ascribe their misfortunes, not to their crimes against humanity, but to some neglect of their duties towards their patron Kali, who, they think, has in consequence abandoned them.

Waghers, a predatory tribe of Rajpoot descent in Kattiwar, near Okamundel.

Waralis, a wild tribe who inhabit the jungles and forests of the Northern Concan, and speak the Mahratta language; their principal object of worship is Waghia (the lord of tigers), a shapeless stone, smeared with red lead and ghi, but they have no priests.

The *Europeans* in India consist chiefly of natives of the British islands, French, Danes, and Portuguese, with their descendants. The British are completely the ruling class, perform all the functions of supreme government over the greater part of the country, and fill all places of power and profit, in the presidencies into which the British territory is divided. They are exclusively the officers of the British Indian army, and the greater number of them, either in a civil or a military capacity, are the servants of the East India Company, or in their employment. The independent settlers are very few; and the total number of Europeans, including the Queen's regiments, throughout India, is believed not to exceed 40,000, of which number so few as one-eighth are not in the employment of Government. Since the renewal, however, of the Company's charter in 1833, the right of independent settlement is so much less fettered than it was previously, that it is probable the number of European immigrants will rapidly increase.

The *East-Indians*, called also *Anglo-Indians*, *Indo-Britons*, *Eurasians*, or *Half-castes*, are the offspring of European fathers by native mothers. No proper census has ever been taken of their number, but it appears to be very considerable, and to be always increasing. They are found chiefly in the capitals of the three presidencies, and in the neighbourhood of the principal civil and military stations. They are in general tolerably well educated; and the whole of the class speak English as well as the vernacular tongue of their native province. They almost monopolize the situations of clerks and accountants in the Government offices, as well as in those of public servants and private merchants. The ladies of the class, though feelingly conscious of the distinction between them and genuine Europeans, yet look upon the young men of their own colour as beneath them. In the seminaries and asylums of Calcutta, there are generally upwards of 500 half-caste girls, illegitimate daughters by native mothers of the higher ranks, who receive a genteel education.

The *French* and the *Danes* are found of course at the small settlements belonging to their respective governments; but their number is relatively small. The descendants of the *Portuguese*, once masters of the coasts of India, are believed to amount to 600,000, who are all Roman Catholics. Most of them occupy only the lower places in the community, and have sadly degenerated from their renowned forefathers; they have now no tie which unites them with Portugal, of which, indeed, they are altogether ignorant. Their condition and state of civilization are nearly the same with those of the aboriginal natives among whom they live, and are frequently much lower. They are, indeed, very ignorant, and are sunk into a state of idolatry and superstition not far removed from heathenism; but their being nominally Christians, and their steadiness in adhering to their faith, preserve them as a distinct class. "In most parts of India no reproach is more cutting than to be called a Portuguese; for the name is supposed to combine all that is most depraved in wickedness with all that is most despicable in weakness."—(*Major Bevan*, II. 88.)

The *Chinese* are fast establishing themselves in Calcutta, where their superior skill as artizans procures them ready and profitable employment. And besides those which we have enumerated, there are various other petty tribes, races, and distinctions of

class, in all parts of India, some of which are partially civilized, while others remain in the lowest stage of savage life. As no complete census has ever been taken, the total amount of the population of India is not known with any degree of certainty. Mr. Martin estimates it at 200,000,000, which is only 90 inhabitants to the square mile; and of that number much more than one-half are British subjects.

LANGUAGES. — The learned language of the Brahminical Hindoos is the *Sanscrit (sancta scriptura)*, in which most of their sacred books are written, and which, though no longer spoken, appears to be the parent of, or at least to be intimately connected with, many of the living tongues and dialects of India. It has also been found to have a remarkable affinity with the Greek, the Latin, and the Teutonic languages of Europe, which are now believed to have all sprung from one original tongue spoken in some central part of Western Asia, from which they diverged at a very remote period. The Sanscrit is written with 52 letters, for several of which there are no corresponding characters in the alphabets of Europe. It has also thousands of syllabic abbreviations. Harmonious and grave, with a just proportion of consonants and vowels, rich in terms, free and flowing in its pronunciation, possessing numerous conjugations, tenses, cases, and particles, this language may be compared to those which are considered the most perfect and most refined of the original tongues. The *Pracrit* is softened Sanscrit, and is spoken by the women in their classic dramas. In modern India there are at least thirty nations, who speak as many distinct languages. The principal of these are: the *Bengalee*, spoken in Bengal Proper by about 30,000,000 people; *Hindûstanee*, spoken in Hindûstan or the upper provinces, in a variety of dialects, by about 20,000,000; the *Maharatta* or *Mahrati*, in the western parts of the Deccan; the *Gurjara*, in Gujrat and the adjoining districts, including the old provinces of Khandeish and Malwah; the *Tamul*, in the country south of Madras; the *Telinga* or *Kalinga* or *Teloogoo* or *Tenugu*, spoken to the north of that city for about 500 miles along the coast, and 200 inland, by about 8,000,000 of people; pervading a semicircle of which Rajamundry may be considered the centre, while the radius extends to Madras. It has a peculiar alphabet. The *Carnataca*, spoken in the Balaghaut or Upper Carnatic, and also in some districts on the west coast; the *Cashmerian; Dogura; Ooch; Sinde; Cutch; Concanese; Punjabee; Bicanere; Marwaree; Nepalese*, &c. In short, it has happened in India, as in every other country where there is no popular literature, nor free and regular communication among its people, that every small community has a dialect of its own, which is intelligible only to its own members or their immediate neighbours; though these dialects may be, as they often are, merely modifications of the one original tongue spoken by the people from which the various communities and tribes of a province or a country may have sprung. For a long time the modern Persian was used by the British Indian Government as the language of their state papers and courts of justice; but that practice is now abolished, and Hindûstanee substituted for general purposes; for all ordinary local purposes, however, the vernacular language of the country is now the language of the courts of law and government. English, however, is everywhere making rapid progress. The spirit of change, or probably the desire of improvement, has seized upon the people; men of all classes have become desirous to learn English, as the only road to the treasures of knowledge which that language contains, and are ambitious to give their children an English education; so that the day is perhaps not far distant when we shall see our own speech spread over all India as the common language of literature, science, government, and religion.

EDUCATION. — Every village can boast of its schoolmaster, who forms as regular a constituent member of the community as the priest or the barber; and the school is open to all boys of pure caste. The ordinary routine of education generally commences in the fifth year, at which time the child is either taught by his father to write the alphabet, or is sent for that purpose to the village school. From the simple characters the pupil proceeds to the compound letters, to words, and to the figures of arithmetic. But the blessings of superior education are very partially diffused even among the Brahmins, most of whom are ignorant of their sacred professional language, the Sanscrit. Among the warlike tribes of the north, music forms a part of education, and one of their principal amusements, though it is indecorous to be considered a performer. Some of the higher classes have proceeded so far in their literary education as to possess an easy epistolary style; though most of the Rajpoots can only read, and sign their names; considerable intellectual energy, nevertheless, is sometimes exhibited among them. Though the gains of the schoolmasters are very small, yet they are generally respectable men. The sacred books

Krishna wrought on earth during his reign of a hundred years. Be this as it may, Krishna is now most extensively and enthusiastically worshipped by the Hindoos of Bengal, and the north-western provinces, where he is the great delight of the females. The Vaisnavas claim for their deity the title of Iswara or the Supreme Lord; but his claim to this honour is contested by the Saivas, who bestow on Siva the title of Buhbandiswara or Lord of the Universe; and frequent, and sometimes sanguinary conflicts take place between the rival sects in support of the pre-eminence of their respective gods. Siva is principally worshipped under the form of the *lingam*, which is nothing more than a smooth black stone, nearly in the form of a sugar-loaf, with a projection at the base resembling the mouth of a spoon. It is indeed an obscene representation, in one image, of the active and passive generative powers. The number of the worshippers of this symbol is beyond comparison greater than that of the other deities or their emblems. The bull *Nandi*, on which Siva rides, is also held in great reverence, and has many living representatives, called brahminy bulls, which infest the cities, and are fed by the people. Siva has besides many other names, the principal of which is that of *Maha-deo*, the Great God. *Kali* (Kawlee), the wife of Siva, known also by the names of Bhavani, Doorga, Ooma, Syilla, &c., is likewise held in very great veneration; but she is represented as ferocious and blood-thirsty, the terror alike of gods and men. She is, however, at the same time, the patron deity of poetry, of arms, and of arts; and is, in short, mythologically considered as merely the energy of Siva in his destructive character of *Kal* or Time. Kali is the name-mother of the city of Calcutta (*Kalighaut*), which has been built beside a *ghaut*, or flight of steps, leading from her temple to the sacred Ganges. But whatever be the object of worship, the Hindoos are all equally idolaters; their rites, ceremonies, and superstitions, are of the most grotesque irrational, and revolting kind; and the effects of the whole system upon their moral character, are thus summed up by Bishop Heber, from the results of his personal observation: — "Of all idolatries which I have ever read or heard of, the religion of the Hindoos really appears to me the worst," in respect of "the degrading notions which it gives of the deity, the endless round of its burdensome ceremonies, which occupy the time, and distract the thoughts, without either instructing or interesting its votaries; in the filthy acts of uncleanness and cruelty, not only permitted, but enjoined, and inseparably interwoven with those ceremonies; and in the total absence of any system of morals, or any single lesson which the people ever hear, to live virtuously, and to do good to each other. In general, all the sins which a Sudra is taught to fear, are, killing a cow, offending a Brahmin, or neglecting one of the many frivolous rites by which their deities are supposed to be conciliated. Accordingly, though the general sobriety of the Hindoos affords a very great facility to the maintenance of public order and decorum, I really never have met with a race of men whose standard of morality is so low, who feel so little shame in being detected in a falsehood, or so little interest in the sufferings of a neighbour not of their own caste or family; whose ordinary and familiar conversation is so licentious; or, in the wilder and more lawless districts, who shed blood with so little repugnance." With the Hindoos, every thing is mixed up with their religion; their sciences, their arts, are all revealed from Heaven. Their religion mixes itself with their legislation, determines their habits, fixes their customs, establishes their institutions, forms their national character; it guides their science, and controls every branch of intellectual pursuit. Undo, therefore, their religion, and you undo the whole system of Hinduism; overthrow their science, and their religion perishes along with it. In an essay read at the last examination of the General Assembly's school (22d January 1841), at Calcutta, by Mahendra, a Hindoo convert to Christianity, a rapid view is taken of the leading branches of Hindoo literature, science, philosophy, and theology, and it is shown in succession how sound knowledge must inevitably demolish the whole. Considering that there were hundreds of intelligent Hindoos present, and that they could patiently listen to such a demonstration from one of their own countrymen, we may well conclude, says Dr. Duff, that the spell and enchantment of Hinduism are fairly broken in the metropolis of British India.

The doctrines and precepts of the present religion of the Hindoos, are contained in Scriptures called the *Puranas*, of which there are eighteen, all alleged by their followers to be the works of Vyasa, the compiler of the Vedas; but they were in reality, according to Professor Wilson of Cambridge, composed by different authors, between the eighth and the sixteenth centuries of our era, though many parts of them are formed of materials of much more ancient date. The Puranas contain theogonies,

cosmogonies, philosophical speculations, instructions for religious ceremonies, genealogies, fragments of history, and innumerable legends relating to the actions of gods, heroes, and sages. Most of them are written for the purpose of supporting the doctrines of particular sects, and all are corrupted by sectarian fables; so that they do not form a consistent whole, and were never intended to be combined into one general system of belief. They are all, notwithstanding, received as incontrovertible authority; and as they are the sources from which the present Hindoo religion is drawn, it must necessarily be full of contradictions and anomalies. Colonel Kennedy, however, strenuously controverts this opinion of the learned professor, and maintains their genuine antiquity and unsectarian character. (*As. Journal*, 1840-41.) The doctrines of the more ancient religion are contained in the *Vedas*, which are incontestibly of great antiquity. Their primary doctrine is the Unity of God. "There is in truth," say repeated texts, "but one Deity, the Supreme Spirit, the Lord of the Universe, whose work is the Universe." Among the creatures formed by the Supreme Being are some superior to man, who should be adored, and from whom protection and favours may be obtained through prayer. The most frequently mentioned of these are the gods of the elements, the stars, and the planets; but other personified powers and virtues likewise appear. The three principal manifestations of the Divinity, Brahma, Vishnu, and Siva, with other personified attributes and energies, and most of the other gods of Hindoo mythology, are indeed mentioned, or at least indicated in the Vedas; but the worship of deified heroes forms no part of the system. Brahma, Vishnu, and Siva, are rarely named; they enjoy no pre-eminence, and are never mentioned as objects of special veneration; and Mr. Colbrooke could discover no passage in which their incarnations were suggested. There seem to have been no images and no visible types of the objects of worship. (*Elphinstone's History of India*, I.)

Buddhism (see p. 125) appears to have been at one time extensively prevalent in India; and Buddha is even claimed by the Brahmins as one of the avatars of Vishnu; but as Buddhism strikes at the root of the supremacy and pretensions of the Brahmins, it seems to have excited their violent animosity, and to have yielded at last to their unrelenting persecution. Buddhism is pre-eminently the religion of reason, while Brahminism depends entirely on tradition and authority. The Mughs of Arracan and the people of Bootan are the only Buddhists now on the continent of India; but Buddhism is still the national religion of Ceylon. The late Mr. Prinsep ascertained, in the course of his learned researches, that, at the period of Alexander's conquest (B. C. 332-320), India was under the government of Buddhist sovereigns, and that the earliest monarchs of the country are not associated with a Brahminical creed or dynasty; and Colonel Sykes (in a paper read before the Royal Asiatic Society, 30th June 1840), states, that he had arrived at the conclusion that Brahminism, such as it has been known in Europe, is of comparatively modern date; that it was introduced into India by a tribe foreign to the country, at least to India south of the Punjab; and that it did not reach the plenitude of its power till after the decline of Buddhism; that the Buddhism of Sakyamuni prevailed universally over India and Ceylon from the sixth till the seventh century, and was not entirely overthrown in India till the twelfth or fourteenth century; that the religion of the preceding Buddhas prevailed from a very remote period; that the followers of the mystic cross, "the doctors of reason," whose characteristic emblem was the Swastika, were Buddhists; that India was at that time divided into small monarchies, though occasionally consolidated under one prince; that there is no evidence of the dominion of princes of the Brahminical faith during the prevalence of Buddhism; that Brahminism, as it is taught by the Puranas, did not spring up till the decline of Buddhism; that the tribe of Brahmins were originally a secular, and not a religious community, and did not acquire political influence until about the period of the rise of the Rajpoot states, and the invasion of the Mahometans; and, that the division of castes was secular, and that similar divisions existed among the Buddhists. He then alludes likewise to the fact, that the oldest inscriptions found in India all relate to Buddhism or the fire worship, and are in a form of the Pali, and not in the Sanscrit language.

The *Jains* are a numerous sect in Central and Western India, and are also found in Mysore. They profess to believe in one God, possessing the attributes of wisdom, power, eternity, and intuition; but affirm that the government of the world is independent of him, that matter is eternal, and that the harmony of the visible world is dependent only on natural and organic laws, which must be everlasting. They pay little respect to the Hindoo gods, and hate the Brahmins; but have, nevertheless

many customs in common with them. They burn their dead, pay great reverence to their gurus or spiritual teachers, and believe that a life of solitary privation will entitle a devotee to be absorbed into the Supreme Being. They are divided into two classes, the Shrawuks and the Lunkas; the former of whom are worshippers of the images of twenty-four deified saints called Trithacaro; while the latter abhor idols, and are more strict than the Shrawuks in observing the laws against the destruction of animal life. The Jains have numerous temples in Kattiwar, Gujrat, and Rajpootana; the most splendid of which are on the sacred mounts, Aboo, Girnar, and Satrunga. One of their principal places of worship is also at Sravana-belgula, 36 miles N. by W. of Seringapatam. The Jaina religion is closely allied to Buddhism, and every circumstance connected with it demonstrates its early and extensive prevalence in Western and Central India. The chief merchants and men of property in those regions are still generally Jains. It appears also that a hard struggle had at an early period taken place between Brahminism and Jainism, in which the latter was finally crushed though not extirpated.

In Malabar and the Carnatic there are about 220,000 *Syrian Christians*, who are divided into three sects or denominations:—1. Those of the pure Syrian church, in Quilon and its neighbourhood; 2. The Syro-Roman Churches, who have adopted the Roman ritual, but still perform their worship in the Syrian language; and, 3. Those who have fully conformed to the church of Rome, and use the Latin liturgy. The Syrian churches remain quite distinct from the Latin; they are superintended by bishops, and a regular establishment of clergy, but they are very poor.

The Portuguese are all Roman Catholics, and the missionaries of that faith have succeeded in spreading it into several inland districts, among a few native converts. The Catholic hierarchy, who now enjoy the protection of the British Government, are four apostolic vicars stationed at Pondicherry, Verapoly, Bombay, and Agra; with a prefect of the Roman mission in Nepaul. There are also two archbishops and two bishops appointed by the Crown of Portugal, namely, the archbishop of Goa, who is metropolitan and primate of the East, and the archbishop of Cranganore. The bishops are those of Cochin and of St. Thomas at Madras. The latter sends a legate to Calcutta, who has under his superintendence fourteen priests and ten churches. Although, however, the forms and ceremonies of the Romish church approximate very closely to those of the Hindoo worship, and though the most profound religious ignorance is alike compatible with both, there have been few converts to Romanism.

The Europeans are, of course, all professors of Christianity, and most of the British are Protestants of the English or Scottish Church. Since 1813 there has been a Lord Bishop of Calcutta appointed by the Crown; and since the last arrangement with the East India Company in 1833, two other bishops have been appointed, one at Madras, and the other at Bombay. Under their charge are three archdeacons, one at each presidency, with a numerous body of chaplains at the civil and military stations throughout the country, all of whom are paid by Government. There are also two chaplains of the Church of Scotland at each of the presidencies, likewise appointed by Government, and paid out of the public revenues.

During the last forty years strenuous efforts have been made to convert the Hindoos to Christianity, but the labours of the missionaries for a long time gave little promise of success. The Baptist missionaries, who had established themselves at Serampore, zealously set to work to translate the Bible into all the languages of India, in the hope that by this silent method the gospel might find its way into every corner of the land. Their labours, however, have not hitherto accomplished much; nor have the missionaries of the Roman Catholic Church been more successful. Indeed the failure of the latter has been so signal, as to draw from one of their number, the Abbe Dubois, an expression of the utter hopelessness of success, and his belief that "these unhappy people (the Hindoos) are lying under an everlasting anathema." "The Hindoos," says Professor Wilson, "are an intelligent and inquisitive people, and not averse to controversy; but they will not contend in matters of speculation against authority. Their defence is reserve; and their obstinate adherence to their own opinions is proportioned to what they think an unfair method of refuting them.' Taught by experience, we may now venture to assert that those Christian sects only who are ready to give a reason for their faith, as well as for the authority which they claim for the Scriptures; and who combine the culture of the intellectual and moral faculties of the people with the preaching of the gospel, can hope for ultimate and complete success.

Besides the religious denominations already enumerated, there are professors of Islam or Mahometans, to the amount of about 15,000,000, who are spread over the

northern and central provinces; Armenian Christians in the great towns; and some Jews. The hill tribes, as the Bheels, Ramoossies, and Koolies, hold communion in religious matters with the Brahmins, only so far as concerns the civil institutions of marriage, naming of children, and such like. Several of the gods worshipped by the common people are unknown to the Hindoo mythology; and others are but incidentally connected with it. The Brahminical religion is exceedingly accommodating to other idolatrous systems; and, consequently, wherever the Brahmins find among other nations a god whom they deem worthy of reverence, they make him an avatar, or incarnation of one of their own deities who most resembles him in attributes. We must not, therefore, take it for granted, that every article of belief which, in more modern times, has attached itself to Hinduism, belongs to the ancient Brahminical creed. One of the most decided anti-brahminical forms of religion is that termed the worship of *Vetal*, in the more secluded parts of the Deccan, Concan, Canara, Gujrat, and Cutch; and which Dr. Wilson of Bombay considers to be not only repugnant to Brahminism, but of an earlier date in those parts of India. *Vetal*, however, is not the proper name of any individual god, but is merely a general term for a spirit or demon. Vetal, in the Deccan, has no image in the shape of any animal; he has no temple, but is worshipped in the open air, generally under the shade of a wide-spreading tree; the place is usually inclosed with a circle of stones; and the principal figure is a rough unhewn stone, of a pyramidal or triangular shape, placed on its base, and having one of its sides fronting the east. (*Jour. R. As. Soc.* V. 192, &c.)—There is also in the Deccan, a religious sect called Bauddha Vaishnavas or Vithal Bhaktas; they are found chiefly in the Mahratta country, but are also scattered over Gujrat, Central India, and the Carnatic, wherever Mahrattas have settled. Although the basis of their system is Brahminical, they may be considered as a kind of religious eclectics and reformers, borrowing doctrines from all sources, and appealing for support to reason rather than tradition. In their notions of deity, matter, and spirit, they appear to follow the Vedanta philosophy. In theory they admit of no distinction of castes, but in practice conform to the ordinary customs of the country.

The festivals celebrated by the Hindoos in honour of their gods are very numerous. Two of these, the one Mahometan and the other Hindoo, which are considered the principal solemnities, are common to the various sects, and take place annually. The European officers are expected by the natives to honour them with their presence; and all contribute towards the expense. The Mahometan festival is called the *Mohurrum;* which is strictly a fast of the most mournful kind; but is attended with such pomp, magnificence, and show, that it rather resembles a rejoicing. This is a dramatic representation of the deaths of Hossein and Hussein (see p. 124), and the marriage of the daughter of Hossein with her cousin. The latter event took place on the day of the battle of Kerbela; and on the seventh night of the Mohurrum the marriage is represented with great magnificence. The whole ceremony lasts ten days, and on that particularly devoted to the commemoration of the deaths of Hossein and Hussein, the Moslems wear mourning, clothing themselves in green garments. The Hindoo feast, which is called the *Dûrga-pûja*, or *Dûsserah*, or *Dûsrah*, also lasts ten days, and takes place in September or October. It is celebrated in honour of the great goddess Dûrga or Kali; and all mercantile, judicial, and government business of every description is suspended for eight days. To a person unacquainted with the religion it appears only a scene of confusion. Men present themselves dressed up in the form of animals, and perform numerous antics; dancing-girls and music also form a chief part of the amusements. The entertainments, however, are various: consisting of recitations, sham-fights, and expert swordsmanship, in which the wonderful activity of the men, their quickness of eye, and rapid movement of limbs, astonish Europeans, who are always the welcome and honoured guests of the wealthy natives on this occasion. A brilliant display of fireworks closes the evening's entertainment; after which refreshments of coffee, sweetmeats and fruit are presented to the visitors, before they retire. Sometimes the different castes countenance the festivals of each other, but more generally they are jealous of rivalry in splendour. The Brahmins are the principal performers in the dûsserah festival; they read portions of their sacred books, recite prayers and incantations, and perform a multitude of ceremonies. There is also a great festival, called the *Hooly*, celebrated in honour of Krishna, in the month Phulgoon (February, March), at the beginning of spring; the amusements of which consist in dancing, singing, and ludicrous exhibitions. It is observed by all classes throughout India, and may be termed the Saturnalia of the Hindoos; when all give way to licentious rioting and confusion.

India is infested by religious devotees, who prey on the community, and form a numerous class of sturdy beggars. They consist of both Hindoos and Mahometans; but the former are found in greater variety and excess. The *Sannyasis* are Brahmins who break off all ties, whether of affection or interest, which could bind them to society, make profession of mendicity, and subsist solely upon alms; and their initiation is accompanied by numerous ceremonies. They perform also numerous acts of penance and mortification; but, in general, these are mere amusements when compared with those which the *Iogis* or *Yogies*(another class of devotees) sometimes inflict upon themselves. The name *Iogi* properly signifies the followers of the Yoga or Pajantalah, a school of philosophers, who maintain the possibility of acquiring entire command over elementary matter by means of certain ascetic privations. But few, if any, of the Yogies are entitled to the dignified appellation of philosophers; most of them are only deluded fanatics; some keeping their hands closed till they are pierced through by the growth of the nails; others making vows to remain standing in a certain position for years, with their hands over their heads, till the arms become fixed and powerless. Some crawl like reptiles on the ground, or roll along in a ball like a hedgehog; others swing before a slow fire, or hang suspended for a time with their head downwards over the fiercest flames. In short, there is no limit to the varieties of torture which they practise. Another class are called *Gosaïns*, who all wear the distinguishing mark of Siva, a crescent on the forehead. Many of them, however, who have made a vow of celibacy, still follow secular professions, and distinguish themselves both in trade and in arms. The *Aghori* are a fraternity who infest almost every town in the upper provinces, and abound at all the holy places of the Jains. Their religious principles teach them to act in almost every respect contrary to the rules of caste, which they despise; and, going to the opposite extreme, they eat everything without scruple, even putrifying human carcasses, which those who respect caste will not even approach. The *Fakirs*, *Fakeers*, or *Fukeers*, are a Mahometan fraternity, who profess to devote themselves entirely to religious duties, and to visit the holy places. These classes together are believed to amount to several millions; wherever there is a fair, a festival, or a sacrifice, they collect, attracted by the prospect of gain, which they have the faculty of scenting from afar. They perambulate the streets in a state of almost perfect nudity, generally besmeared with ashes, and bedaubed with paint. Their principal mode of getting a livelihood, is either by compelling the people to contribute to their wants, by making a clamorous demand at their doors, or by selling roots, drugs, and charms. Many of them, it is said, do not scruple to engage in crime. Among the priests of India, there is one particular class, who, in respect of their authority and rank, bear a strong resemblance to the clergy and episcopal hierarchy of the Christian church; these are the *Gûrûs* or *Gooroos*, a sort of spiritual teachers. Each caste and sect has its particular gûrû; but they are not all invested with the same degree of authority; there are among them gradations of rank, and subordination is strictly preserved. The inferior clergy or gûrûs are very numerous, and derive their authority from the superior priests, who depose them at pleasure, and appoint others in their room. The high priests or superior gûrûs are comparatively few. At stated periods these high functionaries make the circuit of their dioceses, inquire into the conduct of the inferior gûrûs, and perform certain important rites at the temples. Such of them as make profession of superior sanctity greatly extend their pilgrimages, for the purpose of performing the *upaseyda* and other solemn ceremonies, at their colleges and in their sacred groves. The gûrûs are mostly either Brahmins or Sudras.

GOVERNMENT.—In the native states, the Government is a pure despotism in its most naked and most oppressive form; the people and the land are alike the property of the rajah, the nabob, the sultan, or the padishah. The greater part of his revenues consists of the land rents, and these, with rare exceptions, he wastes in riot and debauchery. The instances of a good and enlightened prince, using his power and privileges for the welfare of his subjects, are rare indeed; and India everywhere retains the traces of the tyranny, the misrule, the anarchy, the quarrels, and the bloodshed which have been the pastime of her people and their rulers, from the commencement of her national existence. To this state of things the British ascendancy has so far put an end, that none of the native princes can, with the hope of impunity, follow the example of their predecessors, in measures of open violence. But their states are still left to the misrule of men destitute of the necessary qualifications of governors; and it will require a long continuance of peaceful habits, a complete regeneration, indeed, of Indian society, to root out the vices so intimately interwoven with the national character, as well of the rulers as of the ruled.

The education of the native princes not only unfits them for government, but is often conducted on this very principle by those who have the direction of it. From infancy the future rulers are taught to consider themselves the favourites of Heaven, to whose use and convenience all other created beings are subservient. Possessing no feeling beyond an exaggerated idea of their own greatness and power; incapacitated by early excesses, habitual indolence, and gross ignorance, from forming an opinion on any serious subject, they sink into an early grave; and they advance in succession through the same process, each ending his worthless life in the same manner. The affairs of the kingdom or state are left to the management of adventurers, whose sole aim is to secure a large portion of plunder to themselves, before they are succeeded by others, destined to act in the same manner and on the same principle. In the native governments, however, there is hardly any greater source of evil than the female supremacy which has existed in the country—a system of female government uncongenial with Asiatic institutions, but which the British rulers have unfortunately managed everywhere to foster, instead of putting it down. A prince dies; his widow is allowed to adopt an heir; she adopts the youngest she can find, that her own reign may be as long as possible; and when the heir grows up she tries to dispose of him, that she may adopt another infant. In order to acquire the sceptre, these ladies have been suspected of destroying their husbands, and, in order to retain it, of disposing of their adopted children, or even of their sons. Secluded, as all women of rank are in India, they have no opportunity of learning the character or capacity of the men they entrust with the conduct of affairs; but they are generally found to consider such points as of little importance, and to select either their own paramours, or those of some favourite attendant, commonly making them paramours after they are chosen, if not before. Under such a system the people are governed by a set of miscreants whom they detest and despise, and who, knowing that they are detested and despised, set no bounds to their rapacity.

The superintendence, direction, and control of the whole civil and military government of the British territories and revennes in India, is vested in a Governor-General and Councillors, styled, "the Governor-General of India in Council." The Council is composed of four ordinary members, three of whom are chosen from the East India Company's servants; and, when there is a separate Commander-in-Chief, that officer is an extraordinary member, taking rank and precedence next after the Governor-General. The Governor-General in Council are empowered to *legislate* in every matter touching the government of India, and may assemble and meet in any place; but, when their meeting is held within the territory of Bombay or Madras, the Governor of that presidency is for the time an extraordinary member. The *Executive* Government of Bengal was intended to be vested in the Governor-General, and those three of his councillors who are Company's servants; but, by virtue of a new interpretation of the act of Parliament, the Government of Bengal has been transferred from the Governor-General in Council to the Governor-General himself, in his new capacity of Governor of Bengal. The Government of Agra is administered by a Lieutenant-Governor, or by the Governor-General himself, when he resides within its limits. In each of the other presidencies the Executive Government is likewise vested in a Governor and two Councillors; but these have no power to make laws or to grant money, and are subject in all respects to the orders of the Governor-General in Council, who in their turn are subject to the orders of the Court of Directors of the East India Company, acting under the superintendence of the Board of Control for the affairs of India, and ultimately responsible to the British Parliament. Misgovernment is thus guarded against with as much care and effect as the great distance between Britain and India will admit.

The capitals of the three presidencies are subject to the laws of England, and justice is administered within their limits by Supreme Courts, the judges of which are appointed by the Crown But, within the rest of the territory, justice is administered according to Hindoo or Mahometan law, by courts of various degrees of authority, under European and native judges, from whose decisions appeals lie to the *Sudder-Dewanny* and *Nizamutadawlet*, or supreme courts of civil and criminal law, attached to each presidency, and ultimately to the Queen in Council. A new digest or code of laws for these courts has recently been prepared and promulgated by Government.

For administrative purposes the whole of the settled territory is divided into shires or provinces, called *zillahs*, *circars*, or *collectorates*, each of which is placed under the charge of a government officer, and has its peculiar courts; but the newly acquired territories are generally entrusted for a time to commissioners, who are vested

with the whole powers of government, civil, military, and financial, subject of course to the orders of the Government of the presidency to which they belong. Under the former Mogul governments, a certain number of villages formed a *pergunnah;* a certain number of pergunnahs, comprehending a tract of country equal to a moderately-sized English county, formed a *chuckla;* of these a certain number formed a *circar;* and several circars formed a *soubah* or province, to each of which was assigned a *soubahdar* or governor, who exercised the whole functions of government, civil, military, and financial. Through the various changes of rulers which India has undergone, the Hindoos, in all the settled parts of the country, have uniformly been divided into small communities, or townships, where not only the public services, but also the handicrafts, with the exception of mere agricultural labour, have been performed by persons who hold them by hereditary succession, and who are paid by certain portions of land, or by fixed presents. The principal of these is the *potail* or headman, under whom are the officers and servants of police; an officer, whose business it is to be acquainted with all the local rights and boundaries, and to settle all disputes respecting land; the superintendent of watercourses; the brahmin; the astrologer; the schoolmaster; the village register; the smith; the carpenter; the poet; the barber; the musician; and the dancing girl; and in levying revenues or demanding services of any kind, it has always been found the most expedient method to apply to the heads of the village, and delegate to them the task of collecting and apportioning it. In some provinces, however, the collection of the revenues had been entrusted to certain officers, called *zemindars*, &c., who, acquiring by degrees an hereditary tenure of office, and being merely obliged to pay a certain fixed rent, came in time to be viewed as proprietors, burdened only with a land-tax, and as such they were dealt with by Lord Cornwallis in his settlement of the land-revenues of Bengal. Being entrusted at the same time, to a great extent, with the administration of justice and police, they became in a certain degree the feudal lords of the district. Under them were the immediate cultivators of the soil, the *ryots*, who, either by original right, or long established usage, retained their land, so long as the rent was paid, in undisturbed possession from father to son.

FINANCES. — The revenues of all Asiatic states are drawn principally from the land, the whole of which is regarded as the property of the sovereign. To this general rule the British Indian Government forms no exception; for the greater proportion of their territorial revenue consists of the land rents, collected in some provinces through the instrumentality of zemindars, whom, as we have stated, the Government have constituted hereditary proprietors of the land, though they were formerly only collectors; and in others, derived directly from the ryots or cultivators, by the officers of Government, according to permanent or temporary arrangements, as the case may be. The rest of the revenue consists of the profits of the monopoly of salt, opium, and tobacco; and of taxes on imported merchandise, stamps, licences, postages, and various other imposts. The average annual revenue for the ten years 1829–39, amounted to £15,930,000; and the average annual expenditure for the same period, including interest on debt, but exclusive of the charge of collection, amounted to £14,632,000. Of the finances of the native princes no account can be given.

ARMY and NAVY. — Each presidency has its separate army, commander-in-chief, staff, &c.; but the Commander-in-chief of the supreme Government possesses a general authority over all the presidencies. The total armed force in British India is about 194,000 men, which may be said to consist of three branches, namely, Queen's cavalry and infantry; the East India Company's European engineers, artillery, and infantry; and the Company's native artillery, cavalry, and infantry. The last branch has two sets of commissioned officers, the one European and the other native, the latter consisting of soubahdars, jemadars, and havildars, or captains, lieutenants, and ensigns, who, though holding nominally the same rank as the corresponding European officers, are nevertheless all subordinate to the lowest European commissioned officer. The total number of European troops in India, besides commissioned officers, is usually about 30,000, of whom two-thirds are Queen's regiments, the remainder consisting of persons enlisted in Britain directly for the East India Company's service. The native troops are composed of Hindoos and Moslems, &c. who are mixed in every regiment; they are usually called Seapoys, Sepoys, or Sipahees, and in discipline, cleanliness, sobriety, bravery, and fidelity, are not surpassed by any body of men. The native artillery make it a point of honour never to desert their guns, and wherever a British officer has been found to lead, it has rarely or never happened that the seapoys refused to follow. The native cavalry are excellent and

fearless riders, superior in that respect even to Europeans, and good swordsmen; they are exceedingly fond of their horses, and treat them with the greatest kindness. Of the whole army it may be said that no men are more alive to emulation; a medal is as highly prized by a seapoy as by a British soldier; and many instances of their heroism have been related which would do honour to Greek or Roman story. The Bengal army is considered to possess the men of the highest caste, most of them being Brahmins and Rajpoots; the Bombay seapoy is more a man of all work; and the Madrasites are perhaps the hardiest race; but all are extremely tenacious of their rights, and adhere punctiliously to the customs which their religion ordains.—(*Martin's Statistics, &c.* p. 325.) The prejudices, indeed, of the Bengal troops on many points are often difficult to be overcome, partly in consequence of the great number of Brahmins among them, and partly, because they consider themselves collectively as of a higher caste than the Madras seapoys, whose prejudices are comparatively trivial. The appearance of the Bengal sepoy is in general better than that of the Madras soldier; the Bengalee has generally greater height, though he does not usually possess muscle in proportion. The Madras seapoy is of shorter stature, but has more strength and power of enduring fatigue and privation. The troops of Bengal and Bombay lately gave a noble proof of devotion to their duties, by passing the forbidden limits of the Indus, in their way to Affghanistan, not only without a murmur, but with high spirit. In 1837, two orders of distinction were instituted, the first, styled "The Order of British India," is to be given to soubahdars and jemadars, for long and honourable service; and to consist of two classes. The first class is to consist of 100 soubahdars, with an allowance of two rupees a-day each, in addition to their regimental allowances, or retiring pensions; and the second class, of 100 officers, with an allowance of one rupee a-day each, in addition to their pay and pensions. Members of the first class receive the title of Surdar-bahadur (invincible commander); those of the second, Bahadur (invincible.) The other order, styled "The Order of Merit," is to furnish rewards for personal bravery, and to consist of three classes, with an appropriate badge, and additional pay and pensions, without distinction of rank.

Besides the regular British army, several of the native princes are obliged by treaty to maintain subsidiary troops, who in fact form a guard over the conduct of those who pay them; and, in the event of war, they are required to furnish contingents for service in the field. Formerly, the Indian troops were little better than an undisciplined rabble, called out for the special purposes of the war in which their ruler happened to be engaged: or consisted of mercenary soldiers, who sold their services to the highest bidder, and who changed from one employer to another, just as it suited their interest or caprice. Latterly, several of the princes have attempted to form and maintain regular armies, disciplined in the European manner; but, from imperfect training, the want of proper officers, or general mismanagement, these armies, when brought into collision with the British troops, have proved hardly more efficient than their undisciplined predecessors. But the fighting men form the smallest part of an Indian army; the attendants, servants, and camp followers are innumerable. Each of the British seapoys has his personal servants at all times; but, when the army takes the field, the number of attendants is prodigiously increased. When General Harris advanced against Seringapatam, in 1799, his army consisted of 35,000 soldiers and 120,000 attendants; and when the Marquis of Hastings, in 1817, commenced the Mahratta war, his fighting force amounted to 110,000 men, his camp followers, to half a million.

The navy of the British Indian empire was at one time very considerable, but is now much diminished; it consists only of a few vessels of war of the smaller classes, several armed steamers, and some surveying vessels. The navy is attached to the Bombay presidency; and measures are now in progress to convert it into an armed steam flotilla. At Calcutta, there is a marine establishment, which, though not of a warlike character, is nevertheless of the utmost importance. It is the pilot service, which consists of 12 strong, well fitted, and quick-sailing vessels, of 200 tons burden, several of which are always stationed off the mouths of the Ganges and the Hoogly, on the look-out for vessels coming up the bay, into each of which they place a European pilot, and a leadsman to steer the course to Calcutta. There are 120 Europeans employed in this service; the first rank being that of branch pilots, who are 12 in number, and receive each £70 a-month. The yearly cost of the pilot service, including pilots, men, vessels, lighthouses, buoys, and other necessary adjuncts, exceeds £150,000 a-year.

PRODUCTIVE INDUSTRY.—Agriculture throughout India is in the lowest condition; the implements used are of the rudest kind, and the cultivator follows the routine of

his forefathers, without ever dreaming of improvement. For the articles of produce, see *Vegetable Productions and Topography.*

The great fertility of the soil generally insures a sufficient supply of food; but so dependent is vegetation, in this hot climate, upon the supply of moisture, that an unusual continuance of dry weather sometimes occasions dreadful famines. Tanks or artificial ponds, and wells, are spread in countless numbers over every tract of cultivated country; and the former, being often of great extent, and maintained by strong dams, present an interesting proof of the power of human skill and industry in averting an evil so incident to the climate, and supplying to the thirsty soil that moisture of which it is deprived by the long droughts of a tropical region. Without these innumerable wells and reservoirs, which have been created by the labour of successive generations, great part of India would speedily become an uncultivated desert. European skill and capital are now, to a large extent, applied to the production of indigo and opium, principally in Bahar and Malwah; and tea is cultivated in Upper Assam, where it is already grown of good quality, and may be raised almost to any extent which the market may require. The cultivation of the indigo plant occupies above a million of acres, yielding an annual produce of the value of two or three millions sterling. Silk is the next important article: the average quantity of raw silk exported during each of the twelve years ending 1831, amounted to 1,334,883 lbs.; and in 1837, the value of silk exported exceeded £120,000. There are in India three species of mulberry-tree, and two kinds of silk worm; the silk districts, which are in Bengal, are all situated between the parallels of 22° and 26° N. and long. 86° and 90° E. Opium is produced in Malwah and Bahar; and in 1836 was exported, for the purpose of being smuggled into China, to the enormous extent of 26,018 chests, valued at 17,106,903 dollars. The working of mines is scarcely worth mentioning; diamonds are procured near Punnah, in Bundelcund; coal is wrought in the district of Burdwan, in Bengal, and in other places; and iron in the Carnatic, where excellent steel is manufactured at Porto-Novo. For many ages India was famous for the weaving of silk, cotton, and goats-wool, particularly for muslins and calicoes; but since the opening of the trade in 1813, the introduction of British manufactured goods has almost entirely ruined the Hindoo manufacturers, without supplying a substitute for their employment. In woollen textures, iron work, and earthenware, there are few nations more rude or less successful. Notwithstanding the vast demand in Europe for the staple productions of India, and the unlimited capability of the country to furnish them, the native products have hitherto been exported only to a comparatively small extent. The commerce, however, both in exports and imports, has increased immensely since the trade was opened in 1813. According to the last published parliamentary returns, the value of the imports into the presidency of Bengal in the year 1836–7 amounted to 40,429,076 Company's rupees; into Madras, 15,125,857; into Bombay, 47,245,571; total, 102,800,504 rupees, or £11,565,056 sterling. The value of the exports for the same year amounted, in Bengal, to 67,847,147; Madras, 27,854,757; Bombay, 59,905,978; total, 155,607,882 rupees, or £17,954,161 sterling. The maritime trade centres in Calcutta, Bombay, and Madras; but the people of Mandivee, in Cutch, likewise carry on a great trade; and from Curachee, in Sinde, caravans of camels convey large quantities of goods towards Cabul, Candahar, and other places to the north-west of India; bringing back in return the produce of these countries for exportation. Upwards of 1000 Arabian ships also arrive annually in India between the monsoons; by which an extensive commerce is maintained in a quiet imperceptible manner, through the means of obscure native agents, who freight the Arab boats; and thus many thousand tons of British manufactured goods are bought from our merchants, and find their way into the heart of the most remote and most barbarous countries. But besides the commerce with Europe, a considerable trade is carried on with the Persian Gulf and Arabia; and with China and the Asiatic Islands the trade is also great. A large quantity of wool is now exported from Bombay, the produce of the sheep pastured along the Indus and other districts beyond the British frontier. The first exports reported, were in 1833, when the amount was only 69,994 lbs.; in 1837 it had increased to 2,444,091 lbs. The general peace, also, and the increased safety of communication which now exists throughout all India in consequence of the British ascendancy, are fast producing their natural results, in a rapidly increasing internal commerce. Inland customs are also now abolished, and traders may carry their goods from one extremity of the country to the other, without being pillaged at every step, as formerly, by custom-house officers. For the encouragement of this trade, two banks have been established in Calcutta; one at Agra, which divided, in 1839, nine

per cent. of profits; and one at Bombay. The available capital of these banks is less than £2,000,000 sterling; they have little or no intercourse with England; and their business is chiefly confined to the limited population of the presidencies. The great mass of the people are dependent on the shroffs or money-lenders for pecuniary assistance, at the rate of two per cent. a-month, or on the Government for small advances to carry on their agricultural operations from seed time till harvest. The monetary circulation consists of the rupee, a silver coin of no more than two shillings value, with copper and shells. To remedy these inconveniencies, a great establishment, called the Bank of Asia, with branches in India, has lately been established in London.

Internal Communications.—The roads throughout India are generally mere tracks, scarcely suited for the transport of wheel-carriages; and the modes of travelling are of a nature which an European, accustomed to travelling in Britain, would hardly feel very comfortable. Such conveniencies as stage-coaches, public waggons, and boats, do not exist. There are not even any conveyances which can be hired from stage to stage, except in a very few parts of the country, where a traveller may for a short distance be supplied at certain intervals with ponies which go at the rate of three miles an hour, while he is obliged to hire porters to carry his baggage. The only attempt at travelling post is by going in a palkee (palankin), which is carried by bearers; and this is a mode of conveyance available only to the rich. A palkee holds but one person, and the charge is never less than one, sometimes two shillings a mile, a rate as high as posting in England. The traveller is obliged to give from two to five day's notice to the postmaster, according to the distance; and the average rate of travelling is about four miles an hour. In ordinary cases the traveller carries everything with him; if he is a rich man, accompanied by his family, his retinue resembles that of the patriarchs of old, including his flocks and herds, his camels, and his beasts of burden, his men-servants, and his maid-servants; he travels on his own horses, or on an elephant, while his tents, beds, cooking vessels, &c. are conveyed on camels or in carts. Some of his attendants accompany him on horseback, or on ponies; and the rest follow on foot at the rate of ten or twelve miles a-day. If he travel by water, he hires a comfortable boat for himself and his family, with as many more as he requires for his kitchen and baggage, and embarks with all his retinue. Individuals of less wealth convey their property in carts, and are content to sleep and eat under the shelter of trees, or of one of those magnificent groves of mango which are found at intervals of a few miles in many parts of the country. According to the rank or wealth of the individual his mode of travelling and the number of his attendants varies; some have only a pony to carry their baggage, while they walk on foot; and the poorest not only walk, but carry their own stores, consisting of a blanket or quilt for a bed, a pot of brass or copper tinned in which to boil their pulse or make a curry, a smaller vessel for drinking, and a round plate of sheet iron, on which, supported on two stones or lumps of earth, and with a few sticks or a little cow-dung for fuel, they bake their cakes of unleavened bread, which consist merely of flour and water, kneaded for a few minutes. Merchants, who have goods to dispatch, hire boats, or carts, camels, pack-horses, or bullocks to convey their wares to their destination; and the same conveyances and the same drivers proceed throughout the whole distance, though it may be 500 or 1000 miles. Large sums of treasure or jewellery, amounting sometimes to several thousand pounds, are constantly dispatched by the bankers of one town to their correspondents at the distance of several hundred miles, by the hands of common porters. These men, instead of going in large parties well armed, usually travel in small numbers, without arms; trusting for protection to the extreme poverty of their appearance. There are but few inns or serais; and the best of them consist but of a square of arches or arcades. Some of these, which were raised under the Mahometan princes, are beautiful specimens of architecture, with lofty gateways and battlements; but the greater part of them are rude and shapeless. Under the native princes, these buildings were numerous, and were kept in tolerable order; a regular establishment of guards and servants was maintained at them; and there were private doors and apartments furnished for women. But all have suffered more or less from the political disturbances of the country, and many of the most splendid have gone entirely to ruin. There are generally a few shops within the square; and, in places of considerable thoroughfare, a few people, of a class called Buttenras, who cook dinners for travellers. Where there are no serais, travellers sleep in the verandahs of houses, or in any open sheds they can find; but the climate of India is such as to render shelter unnecessary during nine months

in the year; and none but single travellers, or very small parties, care for serais or houses. All who are rich enough to carry tents with them, or those who travel in considerable numbers, usually prefer encamping under the shade of trees, at some distance from the dirty serais or villages; and when one party is so encamped under a shady grove, a single traveller, or even a party of several, will easily be induced to join them, and often ask permission to do so, for the sake of protection.

But several good roads have been recently formed or projected, particularly one from Calcutta to Cuttack; and a great road, which is to extend from Agra to Bombay, through Allyghur, Sasseram, and Jihree, crossing the Nerbuddah at Akberpore, a total distance of 750 miles, has been surveyed, and partly executed. There are no navigable canals or railways; but the Indus and the Ganges both afford a long course of inland navigation, which is traversed by steam-boats; and a canal has been projected to connect these rivers, proceeding across the country between the Jumnah and the Suttlej; and its tract has already been surveyed and found practicable. — See RIVERS— *Indus*, *Ganges*, &c.

DIVISIONS. — As India has never formed one empire, there is no general system of administrative divisions. By the Mahometan writers, the name *Hindústan* was understood to signify the country in immediate subjection to the sovereigns of Delhi which, in 1582, was divided into eleven *soubahs* or provinces, the names of which are still retained in our maps, though most of them have become entirely obsolete, and those which still remain, have materially changed the extent of their application. These were: — *Lahore*, *Moultan*, including *Sinde*, *Ajmere*, *Delhi*, *Agra*, *Allahabad*, *Bahar*, *Oude*, *Bengal*, *Malwah*, and *Gujrat*. A twelfth soubah was formed of *Cabul*, and the country to the west of the Indus; and several new divisions were afterwards added from the conquests in the Deccan, namely, *Berar*, *Khandeish*, *Aurungabad*, *Beejapore*, *Beder*, *Nandere*, *Hydrabad*, the *Carnatic*, *Gundwana*, and *Orissa*. Of all these, the only soubahs which now remain as geographical appellations are, *Bahar*, *Oude*, *Bengal*, *Orissa*, *Malwah*, *Gujrat*, *Khandeish*, and the *Carnatic*. Bengal is the great plain at the mouths of the Ganges and Brahmapûtra; *Bahar* is a smaller province to the north-west; *Oude* is the name of one of the existing political divisions; *Malwah*, or *Central India*, is the table-land, supported on the south by the Vindhya mountains; *Gujrat* is the country around the Gulf of Cambay; *Khandeish* is a province of the Bombay presidency, in the lower part of the Tuptee; the *Carnatic* is the south-eastern portion of the peninsula of India; *Orissa* extends along the coast, between the Carnatic and Bengal, with a breadth of about ninety miles inland, where it borders upon *Gundwana*, a large tract of country, with ill-defined limits, but understood, in its widest dimensions, to extend westward and northward to Ellichpoor, Bhopal, and Bundelcund.

India is now divided politically into a number of sovereign states, which may be arranged into four classes: — 1. Territories under the immediate government of the officers of the East India Company, which are divided into the three Presidencies of *Bengal*, *Madras*, and *Bombay*; 2. Subject States, left to the rule of the native princes, but under the protection and complete controul of the British Government; 3. States under British protection or alliance, but without interference in their internal governments. These do not in reality differ much from the Subject States, and we have therefore, in the subjoined table, united them in the same class; 4. Independent States. The names of all of these, with their dimensions and population, are stated in the following Table: —

I. BRITISH TERRITORY.

	Area in sq. miles.	*Population.*
Presidency of Fort-William, Bengal.		
1. Government of Bengal, Bahar, and Orissa, including Assam and Arracan,	181,684	40,550,000
2. Government of Agra, or the north-west Provinces,	170,210	17,021,000
Presidency of Fort St. George, Madras,	121,982	15,090,084
Presidency of Bombay,	62,542	6,940,277
	536,418	79,101,311

II. and III. SUBJECT AND PROTECTED STATES.

Nizam, or King of Hydrabad,	88,884	10,000,000
Rajah of Berar, or King of Nagpore,	56,723	3,000,000
Rajah of Sattarah, } Mahrattas,	7,943	794,300
Rajah of Kolapore, } Mahrattas,	3,184	318,400
Rajah of Sawuntwaree, } Mahrattas,	935	93,500
Rajah of Travancore,	4,574	457,400
Carry over,	698,661	90,764,911

			Area in sq. miles.	Population.
	Brought over,		688,651	90,764,911
Rajah of Cochin,			1,988	198,800
Rajah of Mysore (now annexed to Madras),			27,999	2,799,900
Rajah of Sikim,			4,400	440,000
Padishah, or King of Oude,			23,923	6,000,000
Rajah of Rewah, in Bundelcund,			10,310	1,031,000
Chiefs of Dhattea, Jhansi, and Terhi, in do.,			16,173	1,617,300
Rajah of Bhurtpore,			1,946	194,600
The Rajah of Dholpore, Baree, and Rajah-Kairah,			1,626	162,600
Nawub or Nabob of Bhopal, in Malwah,			6,772	677,200
Holkar's territory in Malwah,			4,245	424,500
The Rajahs of Dhar and Dewas, in Malwah,			1,466	146,600
The Guicowar, or King of Baroda,			24,950	2,495,000
The Ras of Cutch or Kach'h,			7,396	350,000
The Rajpoot and other Princes in Rajpootana and Malwah.				
Mewar or Oudipore,	11,784	1,178,400		
Jeypoor,	13,427	1,342,700		
Marwar or Joudpour,	34,132	1,706,100		
Kotah,	4,389	438,900		
Bhondi,	2,291	229,100		
Alwar,	3,235	323,500		
Bikaneer,	18,060	180,600		
Jeysulmere,	9,779	97,790		
Kishenghur,	724	72,400		
Banswarra,	1,440	144,000		
Pertaubghur,	1,457	145,700		
Dungarpoor,	2,005	200,500		
Keroli,	1,878	187,800		
Sirohi or Sirowy,	3,024	302,400		
Ameer Khan, lord of Tonk, Seronj, and Nimbheera,	1,633	163,300		
			109,456	6,718,190
Rajahs of Patiala, Keytal, Naba, Jeend, and others, between the Jumnah and the Suttlej,			16,602	500,000
Bhawul-Khan, Chief of the Daoudpûtras,			30,000	350,000
Ameers of Sinde,			60,000	200,000
IV. INDEPENDENT STATES.				
The Maharajah Scindia in Central India,			32,944	3,294,400
The Punjab, or Kingdom of Lahore,			160,000	4,000,000
The Kingdom of Nepâl or Nepaul,			36,000	2,000,000
Bootan, or the country of Deb-Rajah,			20,000	1,000,000
V. FOREIGN POSSESSIONS.				
French territory,			530	210,000
Danish territory,			93	35,000
Portuguese territory,			1,200	500,000
Total area and population of India,			1,298,452	130,905,000

A large portion of the British territory consists of the possessions of princes, who, though deprived of the government, still enjoy pensions paid out of the public revenues. The territories of some of these princes were ceded in return for military protection; others were forfeited by the chances of war; and those of a third class were taken from them, on account of their tyranny or incapacity. The princes of the first and the last classes, are formally installed on their thrones, and allowed to exercise sovereignty over the tenants of their private estates, and the members of their household; are exempted from the jurisdiction of the British courts of law, have their own civil and military functionaries, with all the ensigns of state, and a British envoy usually resident at their court. The following list contains their names and the amount of their stipends:—

	Stip. Rupees.
The Great Mogul, Emperor of Delhi, and Family,	1,500,000
Soubahdar of the Carnatic, or Nabob of Arcot,	1,165,400
Families of former Soubahdars,	900,000
Rajah of Tanjore,	1,183,500
Soubahdar of Bengal, Bahar, and Orissa,	1,600,000
Families of former Soubahdars,	900,000
Rajah of Benares,	143,000
Families of Hyder Ali, and Tippoo, Sultans of Mysore,	639,549
Rajahs of Malabar,	250,000
Peishwah of the Mahrattas, and Family,	2,150,000
Descendants of Himmut Bahadur,	60,000
Benaeek Rao, and Seeta Baee, Chiefs of Saugor,	250,000
Gowind, Rao of Calpie,	100,000
Nawab of Masulipatam,	50,000
Nawab of Surat,	162,675
Nawab of Furruckabad,	108,000

TOPOGRAPHY.—We shall now proceed to describe the different provinces of India, in the following order:—1. *Government of Bengal;* 2. *Government of Agra;* 3. *Presidency of Madras;* 4. *Presidency of Bombay;* 5. *Subject and Protected States;* 6. *Independent States;* 7. *Foreign Possessions;* and 8. *The Islands.*

§ 1. *Government of Bengal, Bahar, and Orissa.*

This is the original territory granted in dewanny or stewardship by the Emperor of Delhi to the East India Company in 1765. It is situate at the head of the Bay of Bengal, and consists chiefly of the alluvial plains formed and intersected by the Ganges and the Brahmapûtra, with their innumerable branches. The government extends 380 miles in breadth, N.S. in the meridian of Calcutta, and about

520 in length E. W. along the 25° N. lat., comprising an area of 217,000 square miles. *Bengal* is a very flat country, with scarcely a hill of any considerable elevation, and is so intersected by rivers, that even in the driest season there are few points which are 20 miles from a navigable stream. The lower portion of the country, adjoining the sea, is a dreary tract of islands called the *Sunderbunds*, formed by the branches of the Ganges, covered with jungle, and infested with tigers, alligators, and other wild animals. The ground of Bengal consists entirely of alluvial or travelled matter, which extends to a very great depth. A bore made at Fort-William in 1840 reached not less than 481 feet, without rock, which was not found even there, the lowest stratum which was reached consisted of fine sand, like that of the sea shore, largely mixed with shingle. The cultivable soil, however, is very thin, and is composed of saltish mud and sand; but it, nevertheless, produces abundantly all the necessaries, and many of the luxuries of life. Rice, the principal food of the natives, is grown in the low grounds; and wheat and barley in the higher districts. The most fertile and the best cultivated portion is the district of Burdwan, which has the appearance of a garden in the midst of a wilderness. Salt, tobacco, sugar, indigo, cotton, silk, and opium, are also produced, and the cultivation of the potatoe is rapidly extending. The climate is very damp; during half the year it rains incessantly, and during the other half the dews are heavy and penetrating. The rainy season lasts from June till October; the cold season from November till February, when the hot season begins, and continues till the middle of June. During the cold season the atmosphere is clear, sharp, and bracing; but the hot season, in the lower parts of the province, is nearly intolerable, even to a native. The rays of the sun seem to penetrate to the very vitals, while there is not a cloud in the sky to intercept them. When the monsoon is about to change, the very atmosphere feels as if it were thick, breathing becomes laborious, and all animated nature languishes, the oppressiveness of the night being almost as great as that of the day. In the north, however, where the country begins to rise, and where the land is cleared, the climate is said to be very fine. A narrow portion of Bengal extends to the south-east along the coast for 120 miles, forming the district of Chittagong, an unproductive hilly region, which is much resorted to by Europeans for sea air and bathing. *Bahar* lies north-west of Bengal, and contains about 55,000 square miles, of which nearly one-half is plain arable ground; about a seventh consists of a straggling hilly country, producing little; and the remainder, about a third, is a highland region of inconsiderable value. It is divided by the Ganges into two nearly equal portions. The climate is comparatively temperate; the heat and the moisture are less oppressive, and the cool season continues longer than in Bengal. The soil of the plains is generally fertile, unless where saltpetre exists in excess, and being well watered and cultivated, is very productive of the dryer grains, and of the luxuries required by the more active inhabitants of the north. Opium is the staple produce; and a great quantity of saltpetre is manufactured, principally in the divisions of Hajeepore and Sarun. The part of *Orissa* originally included in the Emperor's grant, is only a narrow tract stretching along the south-western frontier of Bengal.

The government of Bengal, Bahar, and Orissa is divided into four provinces and thirty districts or zillahs. CALCUTTA PROVINCE contains the *City of Calcutta, the suburbs, the 24 pergunnahs*, and the zillahs of *Hoogly, Nuddea, Jessore, Cuttack, Midnapore, Burdwan*, and *Jungle-mehauls*. The PROVINCE OF PATNA contains the districts of *Ramghur, Behar, Tirhoot, Sarun, Shahabad*, and *Patna*. The PROVINCE OF MOORSHEDABAD contains the districts of *Bhaugulpore, Purneah, Dinagepore, Rungpoor, Rajeshahye, Birbhoom*, and *Moorshedabad*. The PROVINCE OF DACCA contains the districts of *Mymenving, Sylhet, Tipperah, Chittagong, Backergunge, Dacca* and *Dacca-Jelalpore*. The cities and towns of Bengal have been arranged in the following table, which shows also their distances and bearings from Calcutta.

Azmerigunge,	220	N.E. by E.	Darra,	172	N.W. by N.
Backergunge,	122	E.	Diamond Harbour,	34	S.
Barrackpore,	10	N.	Dinagepore,	210	N.
Bauleah,	125	N. by E.	Dumroy,	145	N.E. by E.
Belcuchy,	145	N.E. by N.	English Bazaar,	165	N.N.W. by N.
Bernagur,	115	N. by W.	Fringy Bazaar,	150	E.N.E
Beyhar,	266	N. by E.	Fulta,	25	S.W.
Bijnee,	310	N.E. by N.	Goragot,	192	N. by E.
Bissunpore,	80	N.W. by W.	Gour,	160	N.N.W. by N.
Boosnah,	100	N.E. by E.	Guzgotta,	242	N. by E.
Buddaul,	175	N. by E.	Harriorpore,	126	W.S.W.
Budgebudge,	13	S.W.	Hurryal,	132	N.E. by N.
Burdwan,	60	N.N.W.	Indos,	64	N.W.
Burhampore,	103	N. by W.	Injellee,	60	S.S.W.
Bygonbarry,	195	N.E.	Islamabad,	220	E. by S.
Chandernagore,	20	N.	Jellasore,	95	S.W.
Chandpore,	148	E. by N.	Jellinghy,	105	N. by E.
Chilmary,	216	N.N.E	Jennidah,	80	N.E. by N.
Chinsura,	22	N.	Jungleberry,	202	N.E. by E.
Chirra-punjee,	280	N.E.	Jyntiahpore,	288	N.E. by E.
Chittagong,	220	E. by S.	Kedgeree,	55	S.W. by S.
Colinda,	180	E.	Kishenagur,	57	N. by E.
Comercally,	101	N.E. by N.	Luckipore,	156	E. by N.
Comillah,	186	E. by N.	Mahmudpour,	95	N.E. by E.
Cossimbazon,	105	N. by W.	Mauldah,	170	N.N.W. by N.
Culna,	45	N. by W.	Maundee,	120	W.N.W.
Culpee,	36	S.S.W.	Midnapore,	73	W. by S.
Cutwa,	73	N.N.W. by N.	Moorley,	64	N.E. by E.
Dacca,	150	N.E. by E.	Moorshedabad,	120	N.
			Nabobgunge,	140	N.
			Narangur,	75	W.S.W.
			Nagore,	120	N.W.
			Natore,	132	N. by E.
			Nuddeah,	56	N.
			Nuldingah,	75	N.E. by N.
			Nulshi,	152	N.E.
			Nunklow,	300	N.E.
			Oleapour,	226	N N.E.
			Pachete,	140	N.W.
			Piplee or Pipley,	96	S.W.
			Plassey,	83	N. by W.
			Pubna,	112	N.E. by N.
			Pucculoe,	148	N.E.
			Purneah,	230	N.N.W.
			Ragonatpour,	125	N.W. by W.
			Rajanagur,	132	E. by N.
			Rajmahal,	172	N.N.W. by N.
			Rangamatty,	270	N.N.E.
			Rungpore,	235	N. by E.
			Rynabad,	84	E.
			Saibgunge,	260	N. by E.
			Seerpore,	158	N.N.E.
			Serampore,	10	N.
			Shanashygotta,	275	N.
			Silhet,	270	N.E. by E.
			Sutalury,	114	E.
			Taujepour,	225	N.N.W. by N.

CALCUTTA, the capital of Bengal and of all India, is situate on the left bank of the Hoogly river, 100 miles from the sea, and 130 from the Sandheads, in 22° 33′ N. lat., and 88° 28′ E. long. The city and suburbs extend along the river more than six miles, but the breadth is various. The European residences are built in the Grecian style, generally detached, and are situated in the southern part of the city, which is called Chowringhee, or in the suburbs. The natives reside in the "Black Town," a congeries of narrow and dirty streets, most of which are lined with mud hovels, but contain also some large houses of the rich Baboos. Fort-William stands on the river side, separated from the city on the north and east by a wide esplanade, which also extends along the south side, where it forms the race-course. The fort is an irregular octagon, strongly fortified; it has cost the H. E. I. C. £200,000 sterling, and would require a garrison of from 10,000 to 15,000 to man the works. The interior is truly beautiful, consisting of large grass plots surrounded by shady trees, and intersected with gravel walks, with here and there piles of balls, bombs, and parks of artillery. The barracks are large enough for 20,000 men. For a quarter of a mile round the outside no tree or house is permitted, and ships pass so close that they may be hailed from the glacis; but the country being perfectly flat, and the ramparts rising only a few feet above it, the fort does not make a very imposing appearance; indeed its strength is scarcely perceptible. The only other building deserving of special notice is the palace of the Gover-

strewed in many places for miles with a thin sprinkling of limestone concretions; it extends from north of the Mahanuddy to Midnapore; it is finely cultivated, and has a most picturesque appearance. At Balasore a group of fine hills approach within 15 miles of the sea. The interior, however, is little known; the hilly region is said to extend for 200 miles in length, by 100 in breadth; the elevation of the highest hills seen from the Mogulbundy is estimated at 2000 feet, but their general elevation only from 300 to 1200. They consist chiefly of granite, resembling sandstone, and containing a variety of minerals and precious stones. The granite rocks are very hard and naked, presenting a bold and varied outline, with sharp peaks and abrupt craggy faces; they are in many parts curiously intersected with trap veins. The rivers in the lowlands are embanked with immense earthen mounds, sometimes 60 feet thick, and 20 high. *Cuttack*, the capital, which is situate on a branch of the Mahanuddy, 250 miles travelling distance from Calcutta, contains upwards of 6000 houses, and 40,000 inhabitants. *Balasore*, 150 miles N.E. of Cuttack, is a seaport town on the Booree-Bellaun river, which is not navigable for vessels of greater burden than 100 tons. Pilots for the Hooghly are procured in Balasore roads. *Pooree*, a small town on the coast, 45 miles S. of Cuttack, is considered the Montpellier of Bengal, the climate being somewhat dry, while a refreshing sea-breeze blows continually from March till July. It contains, or adjoins, the celebrated temple of *Juggernaut*, who is an incarnation of Vishnu; but he is accompanied by his brother and sister; and, besides these, all the idols particularly venerated by the Hindoos find a place within the precincts of the temple, so that all castes and sects may unite in celebrating the great yearly festival. The body of the temple consists of a pagoda 200 feet high, which forms a landmark at sea; and the various services are performed by about 3000 Brahmins and their attendants. The number of pilgrims who attend the yearly festival amounts to 8000 or 10,000. On this occasion the idols are placed on cars, to which long ropes are attached, and by these the people draw them forth, it being considered a meritorious service to assist in advancing the deities; and sometimes people throw themselves before the ponderous wheels, for the purpose of being crushed to death, and thereby obtaining an entrance into Paradise. The superintendence of the temple is vested in the rajah of Khoordah; and 50,000 rupees (£5000) are paid annually for its support, by the East India Company, out of the ordinary revenues of the province. The country round Pooree is considered holy to a great distance; but the most sacred portion is confined to a circuit of about eight miles. The country consists of low sand hills, covered by a thick but not lofty forest. About a mile from the sea vegetation suddenly ceases; the intervening space being a waste of deep and loose sand along the desolate shore. Pooree is situate on the edge of this desert; and the European cantonments stand on a high ridge, perfectly destitute of verdure, fronting the sea, and enjoying the benefit of its cooling breezes. The town is in consequence a desirable residence; and many persons, worn out with the heat of Bengal and Hindûstan, are delighted to loiter upon the healthful, though solitary, shores of Cuttack. Juggernaut is as sacred in the estimation of the Buddhists as of the Brahminical Hindoos, on account of its having contained for a period of eight centuries the *dalada*, or tooth of Buddha, which is now in Ceylon. The name Juggernaut, properly *Jhugat-nata* (lord of the universe), is an appellation which Gautama-Buddha himself assumed; for it is said that on the day he became Buddha, as well as when about to expire, he exclaimed, "O universe, I am thy Lord." Allahabad, Benares, Durjodum, Gaya, Saugor Island, and Juggernaut, are places of devout pilgrimage to the Buddhists of Thibet, but the last two are of pre-eminent sanctity, whilst Gaya, the birthplace of their legislator, is only of secondary rank. All castes are privileged to mix within the sacred limits of Juggernaut; they are said to be even blameless for eating together, which savours more of a Buddhist than of a Brahminical origin.—(*Forbes' Ceylon*, II. 217.) *Kannaruc*, or the *black pagoda*, on the coast, 15 miles E. of Pooree, has been one of the most splendid temples of which India can boast. It was a temple of the sun, of greater antiquity than that of Juggernaut; but has lost its sanctity, and is now deserted. The building is lofty, forming a landmark at sea, and is adorned with numberless sculptures of exquisite beauty, but generally of an indecent character. It stands in the midst of a wilderness of sand, partially overspread with jungle; and great part of the building is now in ruins.

Assam is situate in the valley of the Brahmapûtra, to the eastward of Bengal, is about 360 miles in length, and from 20 to 70 in breadth, and contains an area of 18,900 square miles. It extends from the river Monash to the foot of the Himalayas, close upon the western frontier of China; on the north it is bounded by a cold mountainous country, and on the east and south by a range of mountains which gradually decrease in elevation as they proceed westward, separating Assam from the basin of the Irrawady, and the rivers of Silhet and Cachar. The country is almost a perfect flat, studded with little conical green hills, which rise abruptly to the height of from 200 to 700 feet. It is intersected in every direction by the branches and affluents of the Brahmapûtra, which are almost everywhere navigable; it is always swampy, but in the dry season the ground is susceptible of cultivation, and produces abundant crops. Assam is rich in mineral treasures; nearly all the streams carry down particles of gold; the mountains contain precious stones, and silver; iron is found under the Naga hills, and elsewhere; and coal of good quality has been found to the east of Rangpur. The soil of the hills is composed of a rich red loam, with a sprinkling of particles of quartz or talc; and large masses of granite are scattered over them in whimsical confusion. It is well adapted for agricultural purposes, and for many hundred miles, might be converted into one continuous garden of silk, cotton, coffee, sugar, and tea. The last is an important article of produce; it grows wild in Upper Assam; is the identical tea tree of China, and only requires the same care in its culture and manipulation to rival or supersede the "fragrant weed" of the celestial empire. Coffee is also found in its wild state. Assam is beyond the influence of the moonsoons; the wind blows from east or north-east for nine months in the year, and seldom in any other direction for more than a few days in succession. In the rainy season, in July, the whole country is flooded like an inland sea, the river rising to an average height of 30 feet. Some centuries ago it was richly cultivated by an industrious and enterprising people; but now seven-eighths of the surface are covered with jungle, which emits febrile miasmata. The ruins of splendid temples have been discovered in the midst of wastes and forests; and large tanks, overgrown with brushwood, point out the sites of once populous cities. The ruling people of Assam, who were called Ahoms, and belonged to the Tai family, are supposed to have migrated from the borders of China, and to have conquered the country early in the thirteenth century. In the 17th century they were converted to Hinduism, and adopted the language of Bengal. The present representative of the powerful kings of Assam resides at Jorenath in tawdry splendour, his resources are limited to those of a zemindar, his nobility has been reduced to beggary, and his court presents the empty mockery of royalty. The central part of Assam, with a population of about 200,000, was left for some time under his immediate government, after the country was recovered from the Burmese in 1826; but it has been again resumed, and placed under the immediate charge of British officers. The most ancient capital was *Ghergong*, a city of great extent, built of brick or stone, a few miles above Rangpur; and about 10 miles from it is *Axoo*, the burial place of the kings, where their remains were deposited in a vault under a magnificent temple. During the splendour of the Assam princes *Gowhatti* was also a large city and fortress, but few vestiges of its grandeur now remain. It has however again, within a few years, grown up from a cluster of huts to a well-built and populous town. *Sudiyah*, in Upper Assam, was for sometime a British military station, but it has been abandoned, and the head-quarters of the army have been established at *Saikwah*, on the opposite bank of the Brahmapûtra, three miles below. *Goalpara*, in Lower Assam, is rapidly rising

in importance as a mart for the produce of the country. The Assamese are chiefly Hindoos, followers of Brahminism, and subject to an influential, intriguing, and vicious priesthood. There is also a large proportion of Moslems, who are held in great contempt. The population is besides composed of great numbers of people from the hill country, who intermarry with the Assamese. In Upper Assam, and among the hills, are various wild tribes, as Booteas, Akas, Duphlas, Kuppochors, Miris, Abors, Bor-abors, Mishmis, Kangtis, Bor-Kangtis, Singphos, Muttucks, Nagas, Munniporis, Cacharis, Kassyas, and Garrows. The kangtis, who are Buddhists, and live in Upper Assam, are the most civilized; but the most numerous and most formidable tribe are the *Singphos*, who are somewhat more than lawless, but nevertheless acknowledge the paramount authority of the British Government. The whole country has been hitherto in a state of abject barbarism; but, under its new masters it is rapidly improving; and promises to become one of the finest and richest provinces of the Indian empire.—(*Topography of Assam, by John McCosh, Calcutta*, 1837.)

ARACAN or RAKHAIN lies along the east side of the Bay of Bengal, between 17° 20′ and 21° 2′ N. lat.; extending 240 miles in length, with a breadth varying from 10 to 100, average 60; and containing about 16,540 square miles, of which only 1-24th part is cultivated. It is bounded on the east by a range of mountains, named *Yomadong* by the Aracanese, and *Anupectamien* by the Birmans, which stretches northwards from Cape Negrais to the Tipperah hills. Its mean height is 3000 feet, but in some places it reaches 5000. Not less than 22 passes are said to exist in the ridge, leading between Aracan and Ava, but only five are used for this purpose; the best is the pass of *Arac*, the summit of which is 4061 feet above the level of the sea. Towards the east side the mountains decline by a succession of terraces; but towards Aracan the descent is steep and abrupt. The northern part of the province consists of the large valley of Aracan Proper, which is divided from the Bay of Bengal by a range of heights, which scarcely rise to more than 700 feet, and generally assume a conical shape. Some of them are insulated; others are connected by narrow ridges; but all are scattered irregularly, and separated by ravines, valleys, and confined level spots, each occupied by a stream, a lake, or a marsh. The valley of Aracan varies in width from 10 miles or less to 40; but is so little above the level of the sea, that the tides overflow the flat borders of the rivers to a considerable extent, and leave them at ebb a noisome swamp. With the exception of this swampy ground, the soil consists of rocks crumbling on the surface, and covered by a thin layer of loose black earth, overspread with grass and jungle. In July, when the rains become abundant, the whole valley is inundated; and so numerous are the rivers which intersect it, that they form a complete labyrinth of water communication between the towns and villages during the greater part of the year. The principal river is the *Kaladyne* or *Hurdung*, which rises between Chittagong and Munipoor, and has a course of about 240 miles, terminating in a bay full of low islands of considerable size. The valley is extremely unhealthy; the heat, the inundations, and the general moisture, all contributing to this effect. Even in the dry season, November, December, and January, occasional, and sometimes heavy showers occur; in February, March, and April, they become more frequent; and still more so in May and June, when the periodical rains set in, and continue till November. Heavy dews and thick fogs prevail, even in the dry season, and great heat in the day-time; the thermometer rises in July to 86°, in August to 84, and is never under 77° in these months. The country is extremely fertile, and the soil fit for the cultivation of almost all kinds of tropical produce; but nothing except rice is cultivated to any extent. Indigo, cotton, tobacco, hemp, sesame, and mustard seed, are also raised; the sugar-cane grows very luxuriantly, and might be cultivated to a great extent; black pepper grows wild near Aeng, but is nowhere cultivated; fruit is plentiful, and of excellent quality. The pine-apples and the plantains are perhaps the finest in the world, and are produced in the greatest abundance. Mangoes, jack-fruit, sweet-limes, and cocoa nuts, are plentiful, but oranges are scarce. Onions, garlic, and turmeric, are the principal culinary vegetables; but bhangens, red pepper, cucumbers, water-melons, papeyas, and raktalus, are also abundant. No forest trees grow in the valley, nor on the hills along the shore; but large forests of teak abound in the mountains. Tigers and elephants are found in the upper part of the valley; there are also poultry of various kinds, buffaloes, silk worms, and bees. Fish are so plentiful, that they supply not only a principal part of the food of the people, but also, when dried, an article of export. The whole coast is intersected by rivers, creeks, and inlets of the sea, so as to form a series of peninsulas, isthmuses, and islands, some of the latter of which are large, particularly those of *Ramree* or *Cheduba*. Ramree is about 50 miles in length, mountainous and covered with jungle, and separated from the mainland by a narrow strait. Cheduba is only about 30 miles in length, but, further from the land, low, dry, and sandy, tolerably free from jungle, and healthy. *Akyab*, at the mouth of the Aracan river, is similar to Cheduba, but smaller. Between Akyab and Ramree is an extensive and numerous group of hilly islands, mostly uninhabited. *Broken Islands* are a group of high insulated hills to the north of Aracan; *Haricia Islands* and *Coal Island*, to the south-east of Ramree and Cheduba. Aracan was conquered from the Birmans in 1826, and is now under the charge of a commissioner, and divided into the four districts of *Akyab*, *Ramree*, *Sandoway*, and *Aeng*. In 1831 the population amounted only to 173,028, in 1839 it had increased to 216,051, chiefly by immigration from Chittagong and the neighbouring districts of Bengal. The nett revenue has reached 457,183 rupees (£46,000). *Aracan*, the capital, stands on a navigable river, 50 miles from the sea in a direct line; it was formerly very large, but its population has fallen to 3000, and is still diminishing. Its trade has passed to Akyab, at the mouth of the river, a place which has been selected on account of its advantageous position for health and trade, and is rapidly increasing. *Kyouk-Fyoo*, *Kyouk-Phyoo*, or *Kyouk-Fee*, white stone bay, at the northern end of Ramree, is large enough to accommodate the whole British navy. It is land-locked on three sides, east, west, and south, and is thus completely secured against the south-west monsoon; the anchorage has from 8 to 15 fathoms water throughout, the beach consists of fine hard sand, strewed with beautiful white pebbles, from which the harbour and one of the islands derive their names. The town of *Kyouk-Fyoo* contains 2000 inhabitants; *Ramree*, on the same island, 7000. The latter stands on a creek in a low situation, surrounded by hills, but bears a high character for salubrity.

To the southward of Assam and eastward of Bengal are situate several wild countries, named *Cachar* or *Kachar*, *Tiperah*, *Munipoor* or *Munipur*, *Kosah* or *Cossya* or *Kossyah*, *Gomasee*, and the *Garrows*, which form a sort of neutral territory, between Bengal and Birmah. *Munipur* contains an area of 7000 square miles; the central portion of which consists of a valley of rich alluvial soil, 36 miles by 18, 2500 feet above the level of the sea; the climate is favourable; and the fruits of both tropical and temperate climates are plentiful. It was formerly very populous and well cultivated, but is now overspread with jungle and marshy swamps. *Chundrapore* is the present capital; the ancient metropolis consists only of ruined temples, mounds, and ditches. It was conquered by the Birmese in 1771, and reconquered by the British in 1825, who restored the Rajah. The Munipoories are active soldiers and expert horsemen, and are very courageous. They profess to be Rajpoots, but they have broad Tartar features; the women are coarse and masculine. *Cachar* contains 4300 square miles; its capital is *Cospur*. The country is in great measure waste; and part of it is under British rule. The *Kossyah hills* extend from Silhet to Gowhatti, being an elevated region of 3500 square miles, which forms a sort of table-land, varying from 4000 to 6000 feet above the level of the sea. The inhabitants are ruled by a number of petty Rajahs, who form a sort of confederacy. *Gomasee* and the *Garrows* are a continuation of the same elevated region, extending westward to the great bend of the Brahmaputra. In the Kossiyah hills is *Cherra-poonjee* or *Churra-poonjee* or *Chura-poonjee*, a sanatarium, 30 miles N.N.W.

of Silhet, and 4000 feet above the level of the sea. *Tipperah* or *Tiperah* is situate to the north-east of Chittagong; some parts of it are rich and fertile, but the greater part of the country is wild, covered with jungle and forests, and abounding in wild elephants and other animals.

§ 2. *Government of Agra or the North-west Provinces.*

These provinces extend from the mouth of the Soane upwards, along the Ganges and the Jumnah, to the sources of these rivers, including the Doab or peninsula between them; the hill country of Kumaon, Hurriannee, Rohilcund, Bundelcund, ceded districts on the Nerbuddah, and the districts in Gundwana and Orissa, ceded by the Rajah of Berar in 1826. The outline of the provinces is extremely irregular, varying from about 50 miles in breadth to 500; and they comprise altogether about 170,210 square miles, divided thus:

	Sq. miles.
Government of Agra Proper, containing the districts of *Allahabad, Futtehpore, North Bundelcund, South Bundelcund, Benares, Ghazeepore, Gurruckpore, Juanpore, Azimghur, Mirzapore, Agra, Allyghur, Furruckabad, Bareilly, Shah-jehan-pore, Saharunpore, Meerut, Cawnpore, Etawah, Moradabad,* and *Bolundshuhur*, ...	66,510
Hill Countries of Kumaon, &c.	18,000
Ceded Districts on the Nerbuddah, ...	29,800
Districts ceded by the Rajah of Berar, in Gundwana, in 1826, ...	55,900
	170,210

In the lower districts of Agra, along the rivers, the country is flat, and, where well watered, is exuberantly fertile, particularly in the *Doab*, or peninsula between the Jumnah and the Ganges. As abundance of water is indispensable to fertility, the government have it in contemplation to cut a canal from the Ganges, near Hurdwar, through the length of the Doab, to the south of Coel and Mynpoorie. To the south-west the country rises considerably, and in Bundelcund or Bundelkhund, becomes a table-land diversified with hills, where were formerly numerous strongholds, whose ruins still crown the summits. This table-land contains the famous diamond mines of Punnah. To the north the country along the rivers still continues flat, as far as the Sub-Himalayas, where it is only 1000 feet above the level of the sea, though nearly 1000 miles distant from it in a straight line; but towards the west and north-west frontier, it becomes hilly and wooded. Westward of Delhi is the province of *Hurriannee*, which, in the flourishing times of the Mogul empire, was the appanage of the heir apparent, and is celebrated for the fine verdure, from which it derives its name, for the herds of cattle which are pastured on it, for its lions, and for the valour and independent spirit of its inhabitants. Eastward of Delhi, between the Jumnah and the hills on the north-east is the extensive territory of Rohilcund, which derives its name from the Rohillas.—(See PEOPLE.) The soil and climate of Rohilcund are very fine. The sugar, rice, and cotton raised there are the best in India; toddy and date palms are common, while the walnut, the apple, the pear, strawberries, and grapes, likewise thrive. *Kumaon*, *Gerhwal* or *Gurhwul*, and *Sirmoor*, are severally the names of a mountainous region, popularly called THE HILLS, extending from the Suttlej to the Kali, a distance of 250 miles east and west, and between the Sub-Himalayas and the crest of the main chain, to the north-east. The whole of this space is occupied by numerous ranges of mountains; and, when viewed from a commanding position, presents the appearance of a wide expanse of unconnected ravines, rather than a succession of regular chains. The valleys are lowest on the banks of the largest rivers, where, too, the greatest portion of level land is generally to be met with. These spots, however, never exceed, and seldom amount to, half a mile in breadth. The region contains the sources of the Ganges and the Jumnah, and of several of their tributaries, and no less than four of their five *prayagas* or holy junctions, the fifth and principal one being at Allahabad. The hill countries are blest with a delightful climate, the rigours of the winter being moderated by powerful solar radiation, while the summer heats are tempered by the snows of the Himalayas. Indeed during summer the vicinity of the frozen region causes a continual descending current of air which sets in daily, just as regularly as a sea breeze on a tropical shore, and with an equally invigorating freshness. At Saharunpore, the climate resembles that of the southern parts of Europe, the mean annual temperature being 73°. During more than half the year the Bhot districts of Kumaon are covered with snow, which begins to fall in September, and continues to accumulate till April. In open and level places, where the body of snow is in some parts 12 feet deep, it disappears early in June; but in the hollows it remains till the middle of July. During the five summer months the thermometer ranges at sunrise from 40° to 55°; at mid-day from 66° to 75° in the shade, and from 90° to 110 in the sun. During the cold season, on the contrary, owing to the great evaporation, the thermometer before sunrise is always lowest in the valleys, and the frost is more intense than on the hills of moderate elevation (below 7000 feet), while at noon the sun is more powerful. The extremes within 24 hours have been known to be 18° and 51°. The snow, however, does not fall equally every year; the natives say every third year is one of heavy snow; but in general it does not lie long, except on the mountain tops and ridges. The heat, however, diminishes as the height increases. At Massouree (6700 feet), the mean annual temperature is only 57°; and, at an elevation of 4000 feet the hot winds cease, and vegetation assumes a European character. The quantity of rain which falls at Almora is from 40 to 50 inches. (*See antè* VEGETABLE PRODUCTIONS.)

The tiger is found quite up to the glaciers, of size and ferocity undiminished; there are also lynxes and hyenas, and bears are common, and mischievous. The chamois is not uncommon among the snowy mountains; the musk deer is found only in the highest part of the province; it is unable to bear even the heat of Almora; the *yak* or Thibet cow also droops as soon as it leaves the neighbourhood of the ice. The shawl-goat will live, but its wool soon degenerates; whil the English dog is said not only to improve in strength, size, and sagacity among the Bhooteas, but to acquire in a winter or two the same fine short shawl wool, mixed up with its own hair, which distinguishes the indigenous animals. The same is to a considerable extent the case with horses. Hares are found here, much larger and finer than in the southern provinces, and not inferior to those of Europe. A beautiful flying squirrel is not uncommon in the higher and colder parts of the forests; small marmots, of the Alpine species, abound in the neighbourhood of the snow; and rats of the same species as those of India are numerous and troublesome. There is also a beautiful and rare animal of the deer species, called *goonh*, sometimes employed in carrying the children of chiefs. But the most remarkable animal is a wild dog, in form and fur resembling a fox, but considerably larger and stronger, and very wild and fierce. These dogs hunt in packs, giving tongue like dogs, and possess a very fine scent; they make tremendous havoc among the game of the hills; but compensate this mischief by destroying other wild beasts, and even tigers. Eagles are numerous and very formidable. Quails, partridges, pheasants, larks (not very different from those of England), a black thrush, a little black and red bird, with a note like a robin's, and the goldfinch, are also found. The inhabitants of the hill country are almost all Hindoos, or at least claim a descent from Hindoo colonists who took refuge there from the Mahometan invaders; while their chiefs boast of Rajpoot blood; but they are held in little esteem by their brethren of the plains. In many points which are held to be of the highest importance, they are by no means orthodox; and the circumstance of their dispensing with the ablutions, considered to be so necessary by the worshippers of Gunga, forms an abomination which Europeans unite in

reprobating. Mahadeo (Siva) is the god to whom they pay the greatest homage; but their brahmins are an ignorant race, utterly unacquainted with their sacred writings.

Kumaon, which is the eastern portion of the territory, and contains a superficial area of about 10,697 square miles between the Kali and the Ganges, is directly under the British Government. The portion to the north-west of the Ganges, as far as the Suttlej, and up the valley of the latter river to the borders of Thibet, is governed by native chiefs, who are completely subject to British control, and are under the charge of a resident or commissioner, who resides at Umbala or Subhatoo. That part of the valley of the Suttlej which is under British control, and named *Kunawur* or *Kinnaour*, stretching between the Himalayas and Chinese Tartary or Thibet, is the most delightful region that the pen of the traveller has ever attempted to describe. The climate is the finest in the world, being beyond the reach of the periodical summer rains, and subject only to such gentle and refreshing showers as are necessary for the cultivation of the land. The fruits and the flowers of all countries flourish in this delightful spot; those of Europe are indigenous, and reach perfection with little care. The grape grows in such luxuriant abundance, that from this province alone the whole of India might be supplied with wine. It contains eighteen species of the vine. Honey also is plentiful; but bears are numerous, and very destructive to the vineyards and the hives. Though covered with hills apparently too steep for cultivation, the country is nevertheless very fertile, yielding more corn and vegetables than are sufficient for the support of a numerous population. The country, however, is very high; the villages are generally at the elevation of 8000 or 9000 feet, and some are so high as 12,000; at the north-east frontier, the elevation of more than 20,000 feet above the level of the sea has been attained by travellers without crossing snow; but, nevertheless, the sun's rays for a few months in summer are oppressive, though the atmosphere in the shade is freezing. The nights become frosty in the middle of September; the thermometer sinks below the freezing point in the mornings in October; snow falls towards the end of that month, and covers the ground till March or April. The climate being dry, the falls of snow are not heavy; but the winters are, nevertheless, extremely rigorous. The passes by which Kunawur is approached from the Indian side of the Himalayas are at present somewhat difficult, but might easily be rendered very passable. Kunawur belongs immediately to the Rajah of Bissaher, whose territory includes a large portion of the valley of the Suttlej and the adjoining mountains.

The ceded districts on the Nerbuddah and in Gundwana and Orissa, extend through the middle of India, comprising a large tract of hilly, ill cultivated, and imperfectly explored country, intersected by deep ravines and fertile valleys, and covered in many places with dense forests. They have not yet been reduced to the form of regular provinces, but are placed temporarily in the charge of commissioners, who exercise the whole functions of government.

The principal towns in the north-west provinces, with their distances from Allahabad, are stated in the following table:—

Agra,	280 N.W. by W.	Gohud,	230 W.N.W.	Nugeeana,	354 N.W. by W.
Ajmere,	440 W. by N.	Gooroodwara,	400 N.W. by N.	Nusseerabad,	430 W. by N.
Ajmerghur,	190 S.	Gurrah,	200 S. W.	Paniput,	410 N.W.
Allyghur,	280 N.W.	Hansi,	442 N.W. by W.	Patialah,	475 N.W.
Almora,	320 N.N.W.	Hattras,	274 N.W.	Peelebheet,	260 N.N.W.
Anopshehr,	300 N.W.	Heerapore,	210 S.W. by S.	Punnah,	112 W.S.W.
Bareilly,	260 N.W. by W.	Hissar,	462 N.W. by W.	Rampore,	
Belaspore,	510 N.W. by N.	Hurdwar,	385 N.W. by N.	Rewaree,	370 N.W. by W.
Benares,	53 E.	Jehangeerabad,	305 N.W.	Rohtuk,	400 N.W.
Bhutnere,	535 N.W. by W.	Jubbulpore,	190 S.W.	Rotasghur,	136 E.S.E.
Boolundshuhr,	320 N.W.	Jushpore,	250 S.E. by S.	Saharunpore,	400 N.W.
Callinger,	90 W. by S.	Kallinger,	90 W. by S.	Samanah,	474 N.W.
Calpie,	140 W.N.W.	Kalpie or Calpie,	140 W.N.W.	Sasseram,	140 E. by S.
Canouge,	165 N.W.	Khimlassa,	226 W.S.W.	Saugur,	215 S.W. by W.
Cawnpore,	120 N.W.	Konkelnugger,	230 S.E.	Seheraunpore,	400 N.W.
Chunarghur,	70 E. by S.	Koonch,	172 W.N.W.	Seronge,	280 W.S.W.
Coel,	280 N.W.	Kurnaul,	420 N.W.	Shahjehanpore,	220 N.W. by N.
Cutterah,	232 N.W. by W.	Kuttrah,	232 N.W. by W.	Simla,	490 N.W. by W.
Darahnugger,	350 N.W.	Landour,	420 N.W. by W.	Sirdhana,	370 N.W.
Dehra,	410 N.W. by N.	Loodiana,	520 N.W.	Sirgoojah,	180 S.E. by S.
Delhi,	360 N.W.	Mandouthee,	380 N.W. by W.	Sirhind,	490 N.W. by N.
Deohun,	390 N.W.	Massouree,	420 N.W. by W.	Sirinagur,	380 N.N.W.
Etawah,	200 N.W. by W.	Maunooo,	450 S.W. by W.	Sohagepore,	160 S.
Ferozepore,	580 N.W.	Meerut,	350 N.W.	Sookertal,	370 N.W.
Furruckabad,	200 N.W.	Mhow,	420 W.S.W.	Soonput,	380 N.W.
Futtehpore-Sikri,	270 W.N.W.	Mooradabad,	300 N.W.	Subhatoo,	490 N.W. by W.
Gangpore,	295 S.E.	Mundlah,	205 S. by W.	Sumbhulpore,	305 S.S.E.
Ghazipore,	112 E. by N.	Muttrah,	295 N.W. by W.	Thanesur,	440 N.W.
Ghoosghur,	400 N.W.	Narwar,		Umballa,	456 N.W.

Allahabad, the seat of government, is an ancient city situate at the point of the peninsula formed by the confluence of the Ganges and the Jumnah, 820 miles from the sea by the course of the Ganges, but only 475 W.N.W. in a straight line from Calcutta. The houses are built of mud, and so lately as the time when it was visited by Bishop Heber, the city bore a desolate ruinous appearance; but it is now improving, and the population which, in 1803, was estimated at 20,000, had increased, in 1831-2, to 64,785. The fortress erected by the Emperor Akbar has been much improved since it came into the possession of the British Government; it is lofty and extensive, and, being situate at the very point of confluence, completely commands the navigation of both rivers. Allahabad is the grand military depot of the upper provinces. The Ganges is here a mile wide, and the Jumnah 1400 yards. The confluence of the rivers forms one of the five *prayagas* or holy junction; on which account it is visited by multitudes of pilgrims who come to bathe in the sacred spot; and some for the purpose of drowning themselves, with the certainty of reaching paradise through so holy an entrance. In some years the number of pilgrims has amounted to 220,000. They believe that a third river, the Sereswati, joins the other two below ground; and it is owing to this extraordinary circumstance that the prayaga of Allahabad is reckoned peculiarly holy.

Benares or Bunarus, called also Kashi, the sacred capital of Hindûism, is a large city on the left bank of the Ganges, 53 miles E. of Allahabad. The Ganges here forms a fine sweep of four miles, and the convex side of the curve, which is a high bank, is covered with buildings to the water's edge. The streets of the city are very narrow, and the houses generally lofty. Benares has long been celebrated as the chief seat of Brahminical learning; but, in addition to the holy character of the city, the inhabitants are also very industrious and wealthy. It is the great mart or entrepot for the trade between the north-west and the south-east provinces, and has, besides, considerable manufactures of its own. A new road is forming between it and Calcutta. Benares is built, say the Brahmins, not on common earth, but on the point of Siva's trident; and is so holy that whoever dies here, of whatever sect, and even though he should be an eater of beef, provided he is charitable to

the poor Brahmins, is sure of salvation. This reputation for holiness makes Benares the great resort of beggars; because, besides the attraction of the alms of the multitudes of pilgrims who are continually going and coming, many rich individuals in the decline of life come here to wash away their sins, and expend large sums in profuse and indiscriminate charity. The principal place of worship is a pagoda called Visswishor or Visshishor; which, though small, is handsome, and contains a black cylindrical stone, representing Siva, the Mahadeo or Great God. Both men and women resort in crowds every morning and evening to adore this idol. There is besides a stone figure of Siva's bull, and usually a sacred live bull also within the court of the temple. There are also numerous smaller temples, and a celebrated observatory erected by a rajah of Jyenugger; but there are only a few Moslem mosques. The largest was erected by the Mogul Emperor Aurungzebe on the highest part of the bank of the river, on the site of a famous Hindoo temple, which he destroyed for the purpose. This mosque is distinguished by its two slender and very lofty minarets, peering far above every other object. All the principal houses of Benares are built of stone; but the streets are so very narrow that a palanquin has barely room to pass. The city is divided into 390 mehalas or wards, each with gates regularly closed at night. The population was estimated, in 1803, to exceed 582,000; but, since 1822, it has been ascertained by Mr. Prinsep to be only about 200,450, of whom 181,482 live in the city, and 18,968 in Secrole, and sixteen neighbouring villages. About a fifth part of this population is Moslem; but the city itself is exclusively inhabited by Hindoos; the Brahmins forming a very considerable part of their number. The number of pilgrims who attend the great festivals varies from about 50,000 to 100,000. The British cantonment is at *Secrole*, to the west of the city; and at *Ramnagur*, on the opposite bank, but five miles up the river, is the residence of the Rajah of Benares, one of the East India Company's pensioners.

AGRA, which gives its name to the government, is situate on the right bank of the Jumnah, 830 miles W.N.W. of Calcutta, and 710 N.N.E. of Bombay. It was formerly a very large and populous city, one of the capitals of the Mogul empire; but has fallen greatly to decay, though it still contains about 96,576 inhabitants, of whom two-thirds are Hindoos and the rest Moslem. The city rises in a vast semicircle from the river, which is here half a mile wide, and consists of narrow streets, lined with flat-roofed brick houses. It is very conveniently situate for commerce, and is the entrepot of a very considerable inland and frontier trade. The plains, for several miles around the city, are encumbered with shapeless masses of bricks, stones, and mortar, the remains of beautiful buildings; and occasionally with the fading relics of a garden still surrounded by its ruined wall. In the midst of all this desolation rise two celebrated fabrics, the *Taj-mahal* and the fort. The latter is very large, surrounded by high walls and towers of red hewn stone, enclosing a splendid palace built by the Emperor Akbar, the mootee-musjed, or pearl mosque, a beautiful structure of white marble, and numerous other buildings now sadly disfigured and destroyed. The *Taj-mahal* is a splendid sepulchre of white marble, adorned with the finest mosaics, erected by the Emperor Shah Jehan for his beloved wife Noor-Jehan, called also Noor-mahal (Light of the World, Light of the Empire.) It stands on a terrace within a quadrangular enclosure, measuring 300 yards by 190, and consists of a square building surrounded by a bulbous dome, and adorned with minarets. Shah Jehan intended to erect a similar tomb for himself on the opposite bank of the river, and to connect the two by a bridge; but, dying before his intention could be carried into effect, he was laid beside "the Light of the World," in this, the most splendid monument of conjugal affection ever erected. The Taj-mahal is said to have cost £750,000. It has been repaired, and the surrounding garden put in order, at the expense of the British Government, who have also assigned a handsome annual sum to keep it in repair. All who have seen it agree in considering the Taj-mahal to be the finest architectural structure in existence, and represent it as one of the wonders of the world. Six miles north of the city is *Secundra*, a ruinous village, which, however, contains one of the most splendid buildings in India, inferior only to the Taj-mahal. This is the tomb of Akbar or Ukhbar, the greatest and the best of the Mogul emperors; it is built of red stone, and consists of several tiers of arcades and galleries, over which, at the top, is an area surrounded by a marble screen richly carved. In the centre of the area is the monument of Akbar, of white marble, containing this inscription: "The God Akbar, may his glory be magnified!" together with the hundred names of God inscribed upon it in Arabic, interwoven with flowers and leaves beautifully executed in relief. The body of Akbar reposes in a plain tomb, under a lofty dome on the ground floor. From the top the view is extremely fine; the immediate neighbourhood is covered with the tombs of his wives, ministers, nobles and courtiers, while in the distance is seen the town and fort of Agra, amidst ravines and ruins, and rising above them all the beautiful Taj-mahal, "the diamond of the desert." *Futtehpoor-Sikri* or *Futtypore-Sicri*, 23 miles west of Agra, though now a collection of huts and ruins, was formerly the Versailles of the Mogul emperors, and the favourite retreat of Akbar, whose palace is also in ruins. It contains a splendid mosque still tolerably entire. *Laswaree*, a village 70 miles W.N.W. of Agra, is celebrated for a great victory gained by General Lake over Scindiah's forces in 1803.

DELHI *(Dehli, Dehlee, Delli, Delly, Dilli)*, formerly the capital of the Mogul empire, and still the residence of the Great Mogul, whose empire is now limited to the walls of his palace, and whose revenues consist of a pension from the British Government, is situate on the right bank of the Jumnah, 137 miles N.W. by N. of Agra, and 800 feet above the level of the sea. Delhi is one of the most ancient cities of India, and celebrated in its history under the name of *Indraprest*; it formerly occupied a space of 20 square miles, but great part of its area is now covered with ruins. The city of New Delhi, founded by Shah Jehan in 1631, is about seven miles in circumference, and is surrounded on three sides by walls faced with substantial masonry of huge blocks of sparkling granite, and pierced by seven gates. Within are the remains of many splendid palaces and fine mosques. The imperial palace was also built by Shah Jehan, and stands within an inclosure of red stone walls which is a mile in circumference. It is built of red granite in a beautiful style. The gardens of Shahlimar were laid out by the same emperor, at the cost of about £1,000,000 sterling, but are now destroyed. The prospect to the south of the Shahlimar, as far as the eye can reach, is strewed with the remains of extensive gardens, pavilions, mosques, and tombs, all of which are desolate and ruinous. In the reign of Jehangire, Ali Merdan Khan brought a canal from the upper part of the Jumnah, a distance of 120 miles, to Delhi; but in the general wreck of the empire it became choked up and useless. It was, however, completely restored in 1826 by the British Government, and now supplies the city with good water. The original purpose of the canal was to irrigate the lands; but it is now used to drive saw and flour mills, near Delhi. Under the rule of its present masters, Delhi has been for many years rapidly recovering from its ruined condition, and its population exceeds 150,000, one-eighth of whom, it is said, derive their means of subsistence from digging amidst the ruins of the old city, where they often find articles of value. About nine miles S. of Delhi stands the *Cuttub Minar*, a remarkable tower or pillar 242 feet high; it seems to have been intended as a minaret to a mosque, which was never completed; it was erected upwards of 600 years ago by the Affghan Emperor of Delhi, Cuttub Shah, whose tomb, a humble edifice, stands near it. The emperor died A. D. 1210.

AJMERE *(Agimere, Adjmhair)*, a beautiful and flourishing city, situate in a small detached territory on the eastern flank of the Aravulli mountains, in Rajpootana, was formerly the capital of one of the provinces of the Mogul empire, but fell completely to decay. Since, however, it came into the possession of the British Government, the security thereby provided has induced many merchants of Marwar to settle in it; streets, squares, and bazaars rise up almost daily; a general uni-

formity of plan has been maintained; and the city promises to become the ornament of the country. Population in 1830, 25,000. Though surrounded by bare and rocky hills, the valley of Ajmere is beautiful, being wooded with neem, peepul, and tamarind trees, and watered by extensive lakes. It contains a strong fortress, which has been deemed impregnable, and has within its walls the tomb of Sheikh Kojah Mow-nud-deen, one of the most celebrated Moslem saints in India. The tomb is, externally, a very elegant Saracenic structure of yellow polished lime-stone, apparently inclosing an ancient Jain temple; and the Emperor Akbar is said to have made a pilgrimage to it on foot. It is still visited by numerous devotees. *Pokhur* or *Poker*, six miles W. by N. of Ajmere, is a flourishing and populous town with a great yearly fair, and containing the only temple in India dedicated to Brahma, the Creator, or first person of the Hindoo triad. It is situate on the edge of a lake, an ablution in whose waters is believed to wash away the sins, not only of the person who bathes, but of the family he represents. It is annually visited in October by prodigious crowds of pilgrims, and a strong detachment of troops is despatched to the town to keep the peace among the Soniyasses, Yogies, Ghossains, and other holy devotees, who often come to blows and blood-shed in upholding their respective claims to superior sanctity. Poshkur is also renowned for its gardens and vineyards, the grapes of which are said to equal those of Shiraz, and are the largest and the best in India. *Nusseerabad*, 14 miles E.S.E. of Ajmere, a British military station or cantonment, is one of the healthiest in India, though very dreary. *Beawr*, one of the wildest stations in India, forms a sort of outpost to Nusseerabad, from which it is 30 miles distant. *Bhutneer* or *Bhutneer*, is a large fortress in the desert, 183 miles N.N.W. of Delhi. At *Hissar* there is a stud belonging to the Company. *Sheipoora*, near Ajmere, is also a large place, with signs of prosperity, besides a large lake abounding with alligators.

Ghazeepore or *Ghazeepur*, is a large town and military cantonment on the left bank of the Ganges, nearly midway between Allahabad and Patna, celebrated for the salubrity of its atmosphere and the beauty and extent of its rose gardens. *Chunarghur*, a strong fortress on the right bank of the Ganges, 18 miles S.W. of Benares, was formerly the key of the British frontier on this side, but is now of less importance. It is built on a steep rock, which rises abruptly from the plain, and projects into the river. *Cawnpore* or *Kanpur*, a town on the right bank of the Ganges, with extensive military cantonments, occupying a space nearly six miles in length. At the distance of a few miles is *Bithore*, the place of confinement for the deposed Peishwah of the Mahrattas. *Punnah*, the capital of the diamond district in Bundelcund, a large town situate in a barren rocky plain. It has several handsome temples, in one of which is an idol with a diamond eye of great brilliancy and of immense value. The principal mines are now at *Sukseria*, a village 12 miles from Punnah.

Baroda, the chief place of Rohilcund, is a flourishing town of 70,000 inhabitants, of whom two-thirds are Hindoos and one-third Moslem, noted for their cutlery, brass, and cabinet work, fine carpets, embroidery, and jewellery. The civil and military servants of the East India Company reside in cantonments to the south of the town, protected by a kind of citadel built in 1816, and strong enough to resist any attack from the natives. *Furruckabad*, near the west bank of the Ganges, is a flourishing town with a population of 70,000. Three miles distant, close on the Ganges, is the British cantonment of *Futtehghur*. *Canouje* or *Kenouje*, an ancient capital of Hindustan in the Doab, two miles from the Ganges, consists at present of a single street, but is surrounded with ruins for many miles; 217 miles E. by S. of Agra. *Muttrah*, a large and remarkable city on the right bank of the Jumnah, 30 miles N.N.W. of Agra, is much reverenced by the Hindoos for its antiquity, and its connection with many of their legends; more particularly as the birth-place of the demi-god Krishna. *Meerut*, 32 miles N.E. of Delhi, is a town of some antiquity, and now the principal military station of the British troops in this part of India. It stands in a wide dry plain, and has a church with a high and elegant spire, capable of holding 3000 people. *Sirdhana*, 11 miles N.N.W. of Meerut, was lately the capital of a small principality belonging to the Begum Sumroo, the widow of an adventurer named Sumroo or Sombre, who acquired a gift of it from Najib Khan, and died in 1776. It contains about 4000 inhabitants, of whom 600 are native Christians. The Begum Lady, who died in December 1836, was a devout Catholic; she built an elegant church in the city, and endowed it with a lac of rupees (£10,000); and also erected and maintained at Meerut a Catholic chapel, for the benefit of the British Catholic soldiers. At her death the territory reverted to the East India Company. *Panipat*, 50 miles N. by W. of Delhi, a large commercial town, built of brick on a rising ground in the midst of a very extensive plain, is famous as the scene of two of the greatest and most important battles ever fought in India; the first in 1526, in which Ibrahim Lodi, the last Patan king of Delhi, was defeated and slain by Sultan Baber, the founder of the Mogul empire; the second in 1761, in which Ahmed Shah Abdalee, the first king of Cabul, defeated the Mahrattas, and broke their power. *Kurnaul*, an important military station, 74 miles N. by W. of Delhi. *Jumnoor*, *Jumnour*, or *Thanesur*, 94 miles N. by W. of Delhi, and one of the most celebrated places in Indian mythology, and was formerly filled with temples and crowded with devotees. The Saraswati or Sereswatee, or Surri watty river, a famous mythological stream, flows through it, and is lost in the desert, but is believed to rise again at the prayag of Allahabad, 600 miles distant. In the vicinity are the plains of *Kurkhet*, famed in the Mahabarat. *Puttee Ghur* or *Puttee Ala*, the seat of a rajah, is a compact brick town, but thinly inhabited. *Sohna*, a large city of great extent, is now a mere provincial bazaar or market town. *Ferozepore*, a fortified town near the Sutlej. The capital of a small state, which lately reverted to the East India Company on the death of an old Sikh lady. It was formerly a large city, and still contains a commanding castle and keep. It has been newly surrounded with a wall and ditch; bazaars have been laid out, and shops constructed, and it is rapidly filling with settlers anxious to participate in the new opened trade of the Indus. A fair has been established, and commerce is in a very active state. Steam vessels now ascend from the mouth of the Indus 500 miles by the Chenaub and Sutlej to Ferozepore. *Loodiana* or *Lodeanee*, a large military station near the Sutlej, 200 miles N.W. by N. of Delhi, has been for many years the residence of Shah Zeman and Shah Shuja, the exiled kings of Cabul, and other Families, who are pensioners of the British Government. *Sekranpore* or *Saharanpur*, 92 miles N. by E. of Delhi, and 1000 feet above the level of the sea, contains a fine botanic garden belonging to the East India Company, and a school of monkeys, kept by a set of devotees called Gossens, who have tutored their pupils, an innumerable swarm, into something like discipline. *Hurdwar* or *Hurdeo*, 117 miles N.E. by N. of Delhi, is a celebrated place of Hindoo pilgrimage, on the right bank of the Ganges, where it issues from the mountains. The principal object of pilgrimage is to bathe in the sacred stream; and, for the accommodation at one of bathers, a fine *ghaut* or flight of steps has been erected on the bank of the river by the British Government. A great fair is also held at the bathing season, and sometimes as 200,000 of people have been known to assemble; but the usual numbers vary from 200,000 to 400,000. The water is supposed to acquire additional sanctity every twelfth year; and the concourse of pilgrims is then always greatest.

Deyra, the capital of Lunnoor, is a small town, built on the ridge of a mountain, 5400 feet above the level of the sea, in the midst of an extremely bleak and naked country. *Srinagur* or *Sreenugur*, three miles from Gurhwal, is situate in a valley on the left bank of the Alacananda, 1700 feet above the level of the sea. It was almost destroyed by an earthquake in 1803, and is in a state of decay. *Gurwahl*, a small town of 20. *Deyra-Doon*, a fertile valley, 1350 feet above the level of the sea, 45 miles long and from 15 to 20 broad, between the Jumnah and the Ganges. S1°41′ E. lat. 31° 6′ N. long., 77° 9′ E., 7186 feet above the level of the sea, is a European station in Simoor, near the Suttlej, a small straggling town on a narrow ridge, every ledge and gentle slope of which has been eagerly pitched upon for the site

of a house. The gardens produce European fruits, and culinary vegetables, while the open country abounds with daisies, primroses, rhododendrons, oaks, firs, and dog roses. Rhubarb and ginger are also indigenous, and immense quantities of the finest honey may be had all over the hills. The climate in summer is very fine, and makes the place appear a perfect paradise to those whose constitutions have been exhausted by the heat of the plains; but in winter it is covered with snow. *Landour* and *Mussouri* or *Massuri* or *Massouree*, are two other summer stations of the same kind as Simla, but more easily accessible. They are both situate on the hills on the north side of the Dehra or Deyra-Dhoon; Landour, at an elevation of 7559 feet, and Massouree, 6700. The houses of both are merely thatch-roofed bungalows, and there is so little flat ground that the foundations of many of them are built up with masonry against the edge of precipices; the roads are narrow, being cut along the sides of the most frightful precipices, and yet ladies gallop along them without alarm, and drunken soldiers stagger on them with impunity. Another new station has also been formed at *Sirsa*, in the Bhootea country. *Dehra* is another lovely spot lower down, situate in the valley to which it gives its name, with neat European houses, and an enchanting view from the parade ground. *Subhatoo*, the occasional residence of the political agent who superintends the petty princes of Gurhwal, is a small place, a few miles S.W. of Simla. The proper or official residence of the agent is at *Umballa*, a town on the road from Kurnaul to Loodiana.

Saugur or *Saugor*, the chief town of the ceded districts on the Nerbuddah, occupies a pleasant situation, 2000 feet above the level of the sea, on the banks of a beautiful lake, which is five miles in circumference, surrounded by an amphitheatre of basaltic and sandstone hills, and abounding with a great variety of fish, and in the cold season, with teal, widgeon, wild ducks, numberless snipes, and sometimes geese. The town contains a stationary population of 50,000 inhabitants, chiefly Mahrattas. Ten miles from Saugur an elegant suspension bridge, of 200 feet span, has been erected over the river Bess. Saugur is usually garrisoned by four battalions of infantry, a company of European artillery, and a regiment of local cavalry; it has also a mint, and a large civil establishment. The station is perfectly isolated, and, except in the cold season, the British residents seldom enjoy the sight of a stranger. The climate is damp and chilly. *Hussainabad* or *Hussingabad* or *Hoshungabad*, a considerable town on the left bank of the Nerbuddah, where it is 900 yards wide; but the bed of the river is much broken, and there are 13 fords across it within 14 miles of the town. *Jubbulpore*, 90 miles S.E. of Saugur, is the residence of the political agent for the Saugur and Nerbuddah territory.

§ 3. *The Presidency of Madras.*

The authority of this presidency extends over a great part of the peninsula of India, stretching along the east coast, from the Chilka lake to Cape Comorin; and including, on the west coast, the maritime provinces of Malabar and Canara. The presidency consists of five large provinces, namely, the *Carnatic-payen-ghaut*, or Lower Carnatic; the *Carnatic-bala-ghaut*, or Upper Carnatic; the *Northern Circars*; *Malabar*; and *Canara*. The Lower Carnatic, which extends for 560 miles along the coast of Coromandel, (*Cholamandala*), and inward to the eastern ghauts, is a flat country rising very little above the level of the sea. The soil along the coast is for the most part light and sandy; inland it seems to consist of a decomposition of syenite impregnated with salt, which, in dry weather, covers the ground with a saline efflorescence. The climate is the hottest in India; but in May, June, and July, the air is cooled and the ground refreshed by frequent showers, or by torrents of rain, which sometimes flood the country. At other times vegetation is burnt up, or buried beneath the clouds of fine dust which are driven along by the hot winds from the interior. The Lower Carnatic is not remarkable either for mineral or agricultural produce. The latter consists of dhourra, betel, tobacco, dwarf cotton tree, and raghi, a small grain on which the poorer natives chiefly subsist. The Coromandel coast is low and barren; and the sea, which is extremely shallow, beats upon it with a tremendous surf and a perpetual current. The only signs of vegetation observable from sea, are thickets of low bushes, and wild nopal trees. Around Madras the ground, when well cultivated and watered, produces good crops of rice, and a pleasing verdure is maintained by the indefatigable industry of the natives; but beyond this small circle, the northern part of the Carnatic is nothing but a vast naked and dusty plain, with few villages or signs of animal life. In the southern portion, however, particularly in Tanjore, the country is highly cultivated and productive, a result to which the waters of the Cauvery, which are widely distributed by canals, most materially contribute; the delta of that river forms, indeed, one sheet of rice ground. From Cape Comorin also, through Tinnevelley and Dindigul, the scenery is magnificent and beautiful; the mountains assume every variety of form, and are clothed with stupendous forests, while the smaller hills which skirt the plain are graced with temples and choultries. Winding streams flow from every hill, and the soft and lovely valleys afford a striking contrast to the dark forests which overhang them. The *Bala-ghaut* or *Upper Carnatic*, including Mysore and the districts of Salem and Barramahal, is a lofty table-land, exceeding 3000 feet above the level of the sea; and enjoys a temperate and generally healthy climate. The force of the monsoons is broken on both sides by the Ghauts, and the rain which falls is merely sufficient to clothe the fields with perpetual verdure, and preserve an agreeable temperature. The principal products are rice, raghi, oriental sesamum, sugar-cane, and the castor-oil plant; cocoa nut trees are in some places so numerous as to form forests. Some parts of the Coimbatoor district are, however, only 500 feet above the level of the sea, while other parts rise prodigiously, as the *Nilgherries*, which are the loftiest mountains to the south of the Himalayas. These form a mountain tract 42 miles N.E. and S.W. and 14 broad, with a general elevation of about 8000 feet. No part of the surface can be called table-land; it is interspersed with hills and valleys, generally susceptible of cultivation. The higher parts are sometimes visited by frost even in summer, and in winter they are covered with snow. Lower down there is fine pasture, and the wild fruits of Europe are found in abundance. Some of the deeper valleys are narrow and marshy; every valley has its running stream, and several of these streams meet and form a lake, six miles in circuit, now surrounded by a good carriage road, which affords one of the most delightful drives to be met with in India. The climate is of every variety. That of the higher districts resembles the climate of the intertropical table-lands of America; but is never subject, like them, to the sudden changes and cold piercing winds, which descend from their snow-capt mountains. Spring reigns throughout the year; yet, though there is no winter, the heat is never sufficient to bring to perfection the more delicate European fruits. The lower valleys, however, enjoy the climate of Italy. Game is abundant. These valleys are inhabited by several tribes quite distinct from each other, and from the people of the plains, which were discovered so lately as 1818, by two English sportsmen. From Coimbatoor the passage into Malabar is through a funnel-shaped pass 7 miles wide at the east, and 16 at the west, and 31 miles long, which affords a free course to the N.E. and S.W. winds. To the S.W. of Mysore is the extremely rugged hill country of *Coorg* or *Koorg*, called also *Codagu male* or *Semustan*, containing 2165 square miles, and recently the territory of a sovereign prince, who has now been deposed. Coorg is a woody district, healthy and fertile; interspersed with highly cultivated valleys, the rice of which is proverbial for its size and whiteness. *Malabar* and *Canara* form together a very narrow strip between the western Ghauts and the sea, but extending above 300 miles along shore. A great portion of Malabar is comparatively low, but it is intersected with narrow ravines, covered with forests and jungle, and watered by innumerable streams. Part of the province consists of small low hills, with steep sides formed into terraces for cultivation. The interjacent valleys are extremely fertile, and support a numerous population. In some places a sandy plain three miles wide runs along shore, rising into downs covered with cocoa-nut trees, and

farther inland, producing excellent rice. The coast is indented with numerous inlets. In every stream and river, and also in the sand along the sea shore of South Malabar, near the mouths of the rivers, gold is found; and on some of the mountains there are mines from which this precious metal is extracted. The quantity collected annually is about 730 ounces. The chief vegetable produce is black pepper, cocoa-nuts, cardamums, teak, and sandal wood. Canara, which lies to the north of Malabar, has a broken and rugged surface, and the Ghauts in some places approach quite close to the shore. It is for the most part well cultivated, and produces considerable quantities of rice, betel nut, black pepper, cardamums, and plantains. On the high grounds red gravel prevails; near the coast the soil is sandy; but the valleys are well adapted for rice. The *Northern Circars* extend about 470 miles along the coast of the Bay of Bengal, from Motupalli, south of the Kistnah river, to the Chilka lake. They are separated from Hydrabad by a range of small detached hills, extending between the Kistnah and the Godavery; and from Berar by a continuous ridge of mountains which is nearly impassable for horses or wheeled carriages. The northern border is formed by a continuation of the same range, which, in Goomsur, bends to the eastward, and, with the Chilka lake, forms a barrier of 50 miles in length. Here the hilly districts of Goomsur form a beautiful table-land, of great elevation, with a delightful climate, which is healthy throughout the year. The river Gundezama forms the southern boundary, separating the Circars from Ongole and the Lower Carnatic. The superficial area is about 18,800 square miles. The coast, viewed from seaward, appears mountainous to the beach; but has, nevertheless, along its whole extent, a sandy waste about 3 miles broad, beyond which the land rises into detached hills, which cover the country to the frontiers of Hydrabad. The province receives its name from the circumstance of its comprehending five *circars* or districts *north* of the Carnatic. Four of these were acquired by Lord Clive, by grant from the Great Mogul in 1765; but the fifth was not acquired till 1788. The province is now divided into the five collectorships or districts of *Ganjam*, *Vizagapatam*, *Rajamundry*, *Masulipatam*, and *Guntoor*. The following is a list of the principal towns in the presidency, with their distances from Madras:—

Adoni or Adwany,	270 N.W. by W.	Elloor,	260 N. by E.	Pondicherry,	85 S. by W.
Alvar-Tinnevelly,	350 S.S.W.	Gahgoondaun,	343 S.W. by S.	Poodoocottah,	210 S.W. by S.
Arcot,	65 W. by S.	Ganjam,	530 N.E. by N.	Porto-Novo,	116 S.
Attoor,	152 S.W.	Ginjee,	85 S.W.	Pulicat,	25 N.
Ballary,	265 N.N.W.	Girsupah,	380 W. by N.	Rachur,	200 N. by E.
Bangalore,	180 W.	Goomsurgurh,	535 N.E. by N.	Rajamundry,	295 N.N.E.
Barcelore,	368 W. by N.	Gooty,	225 N.W.	Ramnad,	270 S.S.W.
Batticolah,	380 W. by N.	Guntoor,	220 N.	Repalle,	200 N. by E.
Bednore,	360 W. by N.	Honauwur,	390 W. by N.	Sadras,	40 S.
Bellamcontah,	240 N. by W.	Hunsoor,	390 W. by N.	St Thomas' Mount,	8 S.W.
Bimliapatam,	395 N.E. by N.	Kivalur,	165 S. by W.	Salem,	175 S.W. by W.
Bobilly or Bobilee,	420 N.N.E.	Kotagheri,	260 W.S.W.	Salour,	400 N.N.E.
Brohmadasum,	356 S.S.W.	Kurnool,	245 N.W.	Satenapalli,	230 N.
Calcaud,	370 S.S.W.	Madura,	270 S.W. by W.	Satimungalum,	230 W.S.W.
Calicut,	324 W.S.W.	Mahabalipuram,	34 S.	Seringapatam,	242 W. by S.
Cananore,	350 W. by S.	Mahé,	330 W.S.W.	Shairmadavy,	356 S.W. by S.
Cauveryporam,	186 S.W. by W.	Manargoody,	177 S.S.W.	Shevagunga,	250 S.W. by S.
Cherpoolcherry	300 S.W. by W.	Mangalore,	360 W.	Sidhout,	130 N.W.
Chilkalurpadu,	200 N.	Masulipatam,	190 E.S.E.	Soonda,	367 W.N.W.
Chitteldroog,	270 W. by N.	Mercara,	320 W. by S.	Strevygoondum,	250 S.S.W.
Cicacole,	430 N.E. by N.	Motupalli,	190 N.	Tanjore,	175 S.S.W.
Chingleput,	35 S.W.	Munahpaud,	360 S.S.W.	Tellicherry,	330 W. by S.
Coimbatoor,	265 S.W. by W.	Mysore,	246 W. by S.	Thenkaushee,	350 S.W. by S.
Colar,	140 W.	Naguldinny,	270 N.W. by W.	Tinnevelly,	350 S.W. by W.
Combaconum,	160 S.S.W.	Naitravutty,	360 W.	Tiruvalur,	165 S. by W.
Condapilla,	250 N.	Negapatam,	150 S.	Tranquebar,	160 S. by W.
Conjeveram,	42 S.W.	Nellore,	102 N. by W.	Trichindoor,	350 S.S.W.
Coringa,	285 N.N.E.	Nizampatnam,	290 N.	Trichinopoly,	150 S.W.
Cranganore,	300 S.W.	Nugur,	360 W. by N.	Tuticorin,	330 S.S.W.
Cuddalore,	100 S.	Nundidroog,	174 W. by N.	Vellore,	80 W. by S.
Cuddapah,	135 N.W.	Nuttam,	235 S.W.	Vinuconda,	210 N. by W.
Danaikencottah	240 W.S.W.	Onore,	390 W. by N.	Vizagapatam,	375 N.E. by N.
Darapooram,	250 S.W.	Ootacamund,	270 S.W.	Vizanagur,	520 N.E. by N.
Dindigul,	240 S.W. by S.	Palamcottah,	350 S.W. by S.	Vizianagram,	400 N.E. by N.
Doopaud,	210 N.N.W.	Penang or Ponany,	330 S.W. by W.	Wallajahabad,	37 S.W.
		Periapatam,	280 W. by S.	Wandiwash,	60 S.W.

MADRAS, the capital of the presidency, is situate on the coast of Coromandel, in the Lower Carnatic, in 13° 6′ N. lat., and 80° 25′ E. long., 1030 miles travelling distance S.W. of Calcutta, and 770 S.E. of Bombay. The principal part of the city is Fort St. George, which is handsome and strong, and requires for its defence only a moderate garrison. It stands on commanding ground, and may be easily relieved by sea. In the middle stands the original fort, now converted into government offices, the governor's house, and the exchange. The Europeans, however, reside entirely in their garden-houses in the vicinity, repairing to the fort in the morning for business. The pettah or black town, is somewhat less than half a mile north of the fort, from which it is separated by an esplanade; it is very extensive, but in general meanly built, and dirty. There are in it, however, many fine houses belonging to merchants and shopkeepers, and many streets of neat small houses occupied by Portuguese, Armenians, and half-castes, or by such of the native merchants and clerks as have acquired European habits. A census in 1827 gave only 27,000 houses; but, including all the neighbouring villages, the population is estimated at 420,000, of whom 5-10ths are Hindoos, 3-10ths Moslems, and 2-10ths Anglo-Indians, Europeans, and Armenians. Madras trades with Europe, America, the Asiatic islands, China, Birmah, Calcutta, and Ceylon. The principal articles of import are rice and other grain, chiefly from Bengal; cotton-piece-goods, iron, copper, spelter, and other British manufactures; raw silk from Bengal and China; betel-nut or areca, gold-dust, tin, and pepper, from Malaysia; rice and pepper from Malabar; and teak-wood from Pegu. The exports consist of plain and printed cottons, &c. Madras has no harbour; but large ships moor in the road, in from seven to nine fathoms water, two miles from the shore, and goods and passengers are shipped or landed by means of massulah boats, which, being light, buoyant, and elastic, carry them safely through the tremendous surf which always beats upon the coast, and in which no European boat could live. From October till January is considered the most unsafe season of the year for shipping, in consequence of the prevalence of storms and typhoons. In the fort there is a light-house, 90 feet above the level of the sea, which may be seen from the deck of a large ship 17 miles distant, or from the mast-head at the distance of 26 miles. The principal artillery station of the presidency is at *St. Thomas's Mount*, 8 miles S.W.; the cantonment consists of good houses, built at the base of a hill, with a fort at the top and a Catholic chapel, to which, on certain days, the Catholics of the vicinity resort in great numbers.

Arcot, the capital of the Carnatic when it was a soubah of the Mogul empire, and the residence of the Soubahdar, commonly called the Nabob of Arcot, consists of a fort surrounded by a large town, on the banks of the river Palar. *Vellore* is a fine fortress partly of European, and partly of native construction; but is not of much value as a military position, being commanded by the adjacent hills. It is used as a kind of state prison, and as such is tolerably secure, being surrounded by a wet ditch which abounds with alligators of great strength and ferocity. *Tripetty*, 52 miles N. of Arcot, in a secluded hollow surrounded by mountains, contains the temple of Vencata-Rama, an avatar of Vishnu; whose shrine is considered too holy even to be looked on by a Moslem or a Christian. *Kurnool*, on the Tungabudra, the capital of a petty state, the Nabob of which has been recently deposed, and his state confiscated, for a rebellious plot. *Nundidroog*, a celebrated fortress, fast falling to decay, on a hill 1700 feet high, and almost inaccessible, is only noted now for the growth of potatoes, and for the manufacture of a very fine kind of soft white sugar. *Bangalore* is a town in Mysore 2900 feet above Madras, in a very temperate climate, where the thermometer seldom rises above 80°, and where the cypress and the vine grow luxuriantly. It contains a large proportion of good sized houses, built of red earth covered with tiles, carries on an extensive commerce, and contains about 60,000 inhabitants. The fort is still a strong position; the cantonment, about three miles distant, generally contains four or five regiments of native infantry, two Queen's regiments, with Company's artillery, and numerous civilians, forming altogether a large society. At a little distance is the *Wynaud Jungle*, which contains many wild elephants. *Seringapatam*, a fortified city upon an island in the Cauvery, formerly the capital of the kingdom founded during last century by Hyder-Ali, and which terminated with the death of his son and successor Tippoo Saib, who perished at the storming of Seringapatam by the British forces, 4th May 1799. Population about 30,000. The place, however, is so unhealthy that the garrison has been removed to a plain seven miles off, called the *French Rocks*, where the atmosphere is more salubrious. At *Malavelly*, 25 miles E., and *Seedapore*, 54 miles W. of Seringapatam, Tippoo was defeated by the advancing British armies in 1799. *Hunsoor*, about 30 miles N.W. of Seringapatam, was originally merely a depot for the cattle bred for the transport of ordnance and army stores; but of late the preparation and manufacture of tanned and buff leather have been introduced, and have so rapidly improved that the town is now able to supply every sort of leather equipments as good as those from England at half the price. All sorts of work in brass, iron, copper, and wood, are also neatly executed, sufficient in every respect for the Madras army. Hunsoor has so many advantages that at the shortest notice it can supply all the requisites for an army of 50,000 men. It enjoys a fine climate, and in no part of the presidency are the gardens of flowers, fruit, and vegetables, so beautiful and so productive. *Sravana-belgula*, a village wholly inhabited by Jains, 36 miles N. by W. of Seringapatam, is noted as the principal seat of the Jain worship in the south of India. It contains a colossal statue 70 feet high, apparently formed by cutting away the rock of which it consists. *Ootacamund*, a town or village in the Nilgherries, 6416 feet above the level of the sea, is a great resort for valetudinarians. The temperature near the town is never so high as that of an English summer, nor so low as that of an English winter. A register kept for four years showed a variation from 36° to 70° Fahrenheit, but in nineteen days out of twenty the variation was from 42° to 65°. The average fall of rain has been found to be 45 inches in the year, more than double the quantity which falls at London. *Wallajahabad* contains extensive military cantonments. *Cuddalore* is one of the great stations for soldiers who wish to remain in India after having served out their time, or having become invalids. *Tanjore*, the capital of a rajah, contains the finest pyramidal temple in India, in the precincts of which is the figure of a bull in black marble, finely sculptured. *Combaconum*, in Tanjore, contains 40,000 inhabitants, and is distinguished for its sanctity; near it, in the midst of a richly cultivated country, is a sacred pond, which once in twelve years is filled with the waters of the Ganges, which are supposed to travel so great a distance under ground, and to have the quality of washing away the sins of those who bathe in them. It is in consequence resorted to on these occasions by multitudes of pilgrims. *Porto-Novo*, on the coast of the Carnatic, contains flourishing iron-works which supply steel and steel-ware of excellent quality at a very low price. *Mahabalipuram* or *the Seven Pagodas*, near Sadras, a collection of extraordinary ruins, consisting of temples cut from the solid rock, and covered with sculptures, which are said to mark the site of a great city now partly covered by the sea. *Chillambarum* or *Chillumbrum*, 9 miles S.W. of Porto-Novo, contains several celebrated pagodas, the principal of which is an exquisite specimen of Hindoo architecture; and at *Trivicary*, 15 miles W. by N. of Pondicherry, is a magnificent pagoda, with a stupendous stone tower rising over its gate. In its vicinity are found the most extraordinary petrifactions. Near Trichinopoly, in the Cauvery, is the island of *Seringham*, also celebrated for its pagodas. This part of the peninsula is indeed renowned for its temples and ruins. *Trichinopoly*, on the Cauvery, is a strongly fortified city with 80,000 inhabitants; is very salubrious, and garrisoned by five or six regiments. *Chitteldroog* is a hill fort of such amazing strength as to be reckoned impregnable; but it has become so unhealthy that it has been found necessary to abandon it. *Calicut*, in Malabar, the residence of a prince styled the Zamorin, the first place in India where Vasco da Gama touched after his successful voyage round the Cape of Good Hope in 1498. It contains about 30,000 inhabitants. *Cananore*, a large town with a strong fortress, the principal military establishment on the coast of Malabar. *Mangalore*, a flourishing sea-port town in Canara, with 30,000 inhabitants. *Onore* or *Honauwur*, a sea-port town at the entrance of an estuary or large lake which reaches almost to the Ghauts, and in the dry season is salt. It is the estuary of a river which has a tremendous fall of 872 feet near *Girsupah*. It was at Onore that Hyder Ali built docks, and established a naval arsenal, which were subsequently destroyed. *Mangalipatam*, in the Northern Circars, a square fort in the midst of a salt morass, with a large pettah or native town, a mile and a half N.W., communicating with the fort by a causeway 6000 feet in length, is a place of considerable trade, and also of some military importance. It stands on a semicircular bay which affords tolerable shelter from all winds but the south-east. *Coringa*, a populous town on the coast of a large manufacturing district in the Northern Circars, near the mouth of the Godavery. The bay of Coringa affords excellent shelter for ships, and is said to be the only place on the east coast of India where a vessel of any burden can be refitted with safety.

§ 4. *Presidency of Bombay.*

The authority of this presidency extends over a considerable stretch of territory of the most irregular outline, with several detached parcels in the old Mogul provinces of Arungabad, Beejapore, Khandeish, and Gujrat; comprising altogether an area of 64,938 square miles. The principal part of the territory stretches along the west coast of the peninsula, from near Goa to the mouth of the Nerbuddah, 420 miles. It is divided into thirteen collectorates, namely, *Bombay*, *Poonah*, *Ahmednuggur*, *Khandeish*, *Dharwar*, *South Jagheerdars*, *Satara Jagheerdars*, *South Concan*, *North Concan*, *Surat*, *Broach*, *Ahmedabad*, and *Kairah*. The last four are situate in Gujrat, along the Gulf of Cambay; Poonah, Ahmednuggur, Dharwar, and the Jagheerdars, are situate in the table-land of the Deccan; Bombay and the two Concans below the Ghauts, along the sea-coast. The *Concan* or *Konkun*, is a long narrow tract, a continuation of Malabar and Canara, intersected by numerous rivulets flowing westward from the mountains, and indented with small bays and shallow harbours or coves. It presents a series of steep rocky mountains, rising abruptly like a wall, and affording scarcely any practicable access to the table-land for wheel-carriages. The districts of *Poonah* and *Ahmednuggur*

in the *Deccan*; are elevated 2000 feet above the level of the sea; and are intersected by rivers and streams flowing through the most beautiful valleys, overtopped by trap hills, many of which are crowned with castles of a highly picturesque appearance. Some parts of the country are exceedingly fertile; but, in general, owing to the mountainous and rocky nature of the surface, the district is very barren. In the districts of *Dharwar*, *Satarah*, and the *Jagheerdars*, the country near the Ghauts is extremely rugged; but the eastern portions are less so, and contain level tracts, where the rocks, which in some places stud the surface, are buried in a rich black mould. The Ghauts along the western border are not so much broken into masses as in some other places, but present continuous lines of mountain forests; and, along the banks of the rivers, the country is exceedingly rich and picturesque. At Poonah the annual fall of rain is only 25 inches, while at Bombay it is 100. Dews, however, are very copious, but fogs are little known. The climate is salubrious; there are two harvests, one during the hot and wet season, consisting principally of rice, the other during the cold or dry season. The rivers, during the monsoons, are magnificent streams; but in the dry season, their beds are often only sandy plains, with a mere thread of water. *Khandeish* is an extensive, fertile, well-watered plain, interspersed with low barren hills, at the base of which run numerous limpid rivulets which find their way to the Tuptee. Great part of the district is still covered with jungle. *Gujrat*, when a province of the Mogul empire, comprised a large extent of country along the eastern and northern shores of the Gulf of Cambay, with the whole peninsula of Kattiwar; but the name is now understood to comprise only the districts on both sides of the gulf which are dependent on the civil jurisdictions of Ahmedabad, Kairah, Baroda, Broach, and Surat; the remainder being distinguished as Kattiwar, which is under separate authority. In this restricted sense Gujrat is, generally speaking, a dead level, through which the mountain torrents of Rajpootana, Khandeish, and Malwah have cut their channels. The soil in most places consists of a loose, rich, alluvial deposit, in others of a deep sandy and mixed soil, resting on a calcareous formation, similar to that of Bengal and Bahar, and termed by the natives *Kankars*. The Nerbuddah and the Tuptee are the only rivers properly so called; for the Subermatti and the Mhye are merely great water-courses, which are almost completely dried up within three or four months after the rains. The climate is reckoned one of the worst in India, being intensely hot during the greater part of the year, with a heavy thick atmosphere, which few people can endure. During December, January, and February, the mornings and evenings are cold, and the rest of the day temperate and pleasant; the thermometer is then often under 60°, sometimes considerably lower, and at noon seldom exceeds 70°. But during the hot winds, in the ensuing months, it rises from 70° to 100°; and in the plains of Cambay it has been seen at 116° in the soldiers tents. (*Forbes' Oriental Mem.* III. 245.) The soil is particularly fertile; several sorts of grain may be seen growing in the same field. The Parsees are numerous, and form the most respectable part of the population of Gujrat.

BOMBAY, the capital of the presidency, is situate on a small, rocky, barren, and once pestilential island, on the north-west side of the entrance to the bay, in 18° 56′ N. lat., and 72° 57′ E. long. The city is built on the south-east side of the island, and is surrounded by walls about two miles in circuit, which are mounted on the sea side by formidable batteries. The houses are picturesque, but inconveniently crowded together; they are very lofty, and generally built in the Portuguese style. Three sides of the walls are washed by the sea; on the fourth is the esplanade, and beyond it the Black town, spreading out amidst a wood of cocoa nut trees, a curious, busy, bustling, and dirty place; and, still farther off, the cocoa nut gardens are studded with villas. Those who are obliged by business or duty to remain near the government house in the fort, live in town only during the rainy season; at other times they live in bungalows, or huts and tents on the esplanade, where they enjoy the benefit of the sea breeze. The population amounts to about 210,000, who occupy 30,786 houses, grouped into the several towns, called *Bombay Castle*, *Dungaree*, *Mahim*, *Byculah*, and *Colabah*. Including English and Portugese, there are no less than nineteen languages spoken in the island; a circumstance which proves the heterogeneous character of the population. Of the native community a large number are Parsees or Persians, who, driven from Persia in the eighth century, took refuge in Gujrat, and have now established themselves in Bombay. The greater part of the wealth of the place is in their hands. The Jews are more numerous, and a more respectable class than is to be found in any other part of India; they make good soldiers, and are found in considerable numbers in the ranks of the army. The markets are well supplied; and water is furnished from large cisterns or tanks, where it is collected during the rains. It is not considered wholesome; and a singular disease is ascribed to the use of it. An insect or worm appears on the body in a large vesicle or bag, sometimes as large as a hen's egg; when the bag is opened, the end of a worm, like a white thread, is seen in the midst of a gelatinous fluid. To remove the disease the end of the worm is seized, and gradually wound on a dossil of cotton wool, a few turns being taken daily till the whole is extracted. It is sometimes several feet long, and occasions great pain. Bombay is the only principal settlement in India, where the rise of the tides is sufficient to permit the construction of docks on a large scale. The highest spring tides rise 17 feet; but the usual height is only 14. The docks and dockyards are capacious, and are entirely occupied by Parsees, who are complete masters of the art of ship-building, and construct vessels of the largest class. Bombay is the great entrepot for the trade of the Red Sea, the east coast of Africa, Arabia, the Persian Gulf, Indian archipelago, and China. European and American vessels find cargoes here from the greater part of India, consisting of drugs, spices, arrack, shawls, carnelians, agates, cotton-wool, &c. Many fine ships are owned by Parsees and other native merchants. The island is composed of two unequal ranges of whinstone, with an intervening valley about three miles in width; it has been converted from an unwholesome swamp into a very salubrious residence; is traversed by five roads and connected by a causeway with Salsette, a great portion of which is now under cultivation. The principal objects of curiosity near Bombay are the caves of *Kenery*, in Salsette, and *Elephanta*, on a small island in the bay, six miles E.S.E. of the town; the latter containing a remarkable three-headed figure of Siva and his wife.—(*See Journal R. As. Soc.* V. 81.)

SURAT or SOORUT, a very large city, with 600,000 inhabitants, on the right bank of the Tuptee, 20 miles from the sea, is the station of a considerable military force, of a collector, of a board of customs, a circuit court, and the Sudder-Adawlut, or supreme court of the presidency. It is nevertheless falling rapidly to decay, in consequence of its trade having been diverted to Bombay; and in April 1837 many thousand houses were destroyed by fire. The most remarkable object in Surat is the pinjra-pol, an hospital for sick, aged, and maimed animals, supported by the Banians. Even rats, mice, and insect vermin of all kinds, are not only tolerated, but fed. Surat and its neighbourhood are thronged with religious devotees, as fakirs, jogies, and gossaens; and at *Pulparrah*, on the Tuptee, six miles distant, is a holy place, abounding with altars, temples, and sacred trees. *Baroche* or *Beroach*, *Beroatch* or *Broatch*, a poor dilapidated town, 25 miles from the sea, on the left bank of the Nerbuddah, which is here two miles across, even at ebb tide, but very shallow, has a considerable trade in exporting cotton to Bombay, and contains about 30,000 inhabitants. In an island 12 miles above the town, is the banyan tree which has been renowned ever since the arrival of the Portuguese, and is still flourishing. *Kairah*, a large and neat town, surrounded by a lofty wall, at the confluence of the small rivers Wartuk and Serry, 30 miles north of Cambay. There is a large military cantonment, a mile and a half from the town, which is extremely unhealthy. *Gundivi*, *Monsera*, and *Balsun*, are large and populous towns, remarkable for their order and cleanliness. *Bassein*, 16 miles N. of Bombay, once a celebrated Portuguese colony, was formerly a town of considerable size, surrounded by a regular

rampart and bastions, but is now forsaken and desolate. It contains eight churches, and the ruins of several magnificent buildings; but is inhabited only by a few fishermen and shikaries. *Tannah*, a neat and flourishing town, and *Gorabunder*, a village, are both in Salsette.

POONAH or PUNAH, lately the capital of the Mahratta empire, is situate in a small hollow, on the banks of the river Moota-Moolla, in a very extensive and barren plain, 2000 feet above the level of the sea, and surrounded by trap hills of singularly scarped forms, which rise from 1500 to 2000 feet higher. The city is without walls or fort, and till recently was very irregularly built and ill paved, with inferior bazaars, and ruinous streets; but it now presents a totally different appearance. Excellent streets and drains have been formed; all the nullahs (river channels) have been covered, and every part of the city made conveniently accessible. Population 70,000. Poonah contains a Sanscrit college, where grammar, logic, law, rhetoric, and astrology are taught. At the governor's bungalow, called *Dapourie*, a mile or two from Poonah, is a good botanical garden, filled with the choicest plants. *Singhur*, 10 miles S.W. of Poonah, affords a cool and salubrious retreat; but possesses no accommodation for visitors. *Kirkee* or *Kirky*, a small but pretty cantonment, is connected with Poonah by an excellent road. *Candala*, the Montpellier of Western India, is a village on the road to Panwell. *Chinchoor*, 10 miles N.W. of Poonah, is the residence of a live god, a supposed incarnation of Ganesa or Ganputty, the tutelar deity of the Mahrattas, whose revenues are about £5000 a year. *Carli* or *Karli*, 45 miles N.W. by W., contains a famous cave temple. *Panwell*, a small and dirty village on the east side of Bombay harbour, the landing-place for travellers from Bombay to Poonah, which are connected by a splendid road over the Ghauts. *Ahmednuggur*, 83 miles N E. of Poonah, once a large city, and the capital of a kingdom, is now little better than a heap of ruins; it contains a strong stone fort, of an oval shape, about a mile in circuit. *Joonere* is a town and fortress of great natural strength, 48 miles N. of Poonah. *Trimbuck*, a formidable and wonderful hill fort at the source of the Godavery, measuring 10 miles round the base, and rising in a perilous steep of 600 or 700 feet. *Unkietunkie*, 130 miles N.N.E. of Poonah, is one of the most complete specimens of natural fortifications that exist. It rises on every side from 150 to 200 feet in perpendicular height, inclosing on the top a level plain a mile in circuit; the ascent is made by flights of steps cut in the rock, and secured by strong gateways. It has granaries, magazines, and armouries, all hewn in the rock, and thus setting bombardment at defiance. *Asseergurh*, a town and fortress of great strength, in a small detached territory, near the north bank of the Tuptee, 215 miles E.N.E. of Surat. The fortress is built on a rocky hill, surrounded by a precipice 80 to 100 feet in perpendicular height, and measuring 600 yards in length by 100 in breadth. *Dharwar*, the capital of the South Mahratta country, is a large military station. *Belgaum*, a strongly-fortified town, in a small isolated division of Dharwar, has a healthy climate, but the trade is stopped for six months in the year by the rains.

§ 5. *Subject States.*

The KINGDOM of HYDRABAD, belonging to his Highness the Nizam-ul-mulk, the hereditary Mogul Soubahdar of the Deccan, occupies the middle portion of the table-land of the Deccan, measuring about 460 miles in its greatest extent, N.S. and E.W., and containing above 100,000 square miles. The country comprises some fine tracts of land; and, towards the north, the valley of Berar is particularly fertile. It is traversed by the Godavery and the Kistnah, with their numerous tributaries; the occupations of the people are chiefly agricultural; but the government is very indifferent, and everything is in the worst condition. The Nizam's subsidiary force consists of six battalions, disciplined and officered like the British seapoys; some of the officers have no rank but in the Nizam's service, but most of them, especially the commandants of corps, are in the service of the East India Company. The appointment to the higher ranks is in the patronage of the governor-general; but the minor appointments are generally made by the resident at Hydrabad. His proper army contains cavalry, infantry, and artillery. The infantry consists of from 12,000 to 15,000 regular troops, who may, however, be regarded as a sort of militia, being rarely employed beyond his frontier. The artillery are also under the direction of European officers, and form a very efficient body. His cavalry, generally called the irregular horse, are not equal to the infantry in order, dress, and discipline, nor have they the same proportion of European officers; most of them are Moslems, and bigotted in their attachment to ancient customs. A great part of the country is possessed by Jaghiredars, or persons who have districts assigned to them in Jaghire, who draw all the rents, and are, in short, almost the counterparts of the feudal barons of Europe during the middle ages. Only a small portion of the kingdom is governed directly by the Nizam himself. His Highness is the descendant of Nizam-ul-mulk, who, after the death of Aurungzebe, obtained possession of the Mogul conquests in the Deccan about the year 1717; but, since that time, the limits of the territory have experienced great fluctuations. His capital is Hydrabad; and the other principal towns, with their distances from the capital, are stated in the following table:—

HYDRABAD, the capital, N. lat. 17° 15′; E. long. 78° 42′; 380 miles E.S.E. of Bombay, and 320 N N.W. of Madras.

Ajuntah,	280 N.W. by N.	Eilgundel,	85 N.N E.	Manickdroog,	170 N. by E.
Akola,	270 N.N.W.	Ellichpore,	280 N.W. by W.	Moodgul,	160 S.W.
Anagoondy,	190 S.W.	Ellora,	280 N.W.	Muktul,	85 S.W.
Argaum,	280 N.W. by N.	Gawulgurh,	290 N.W. by W.	Mulkher,	85 W. by S.
Assaye,	260 N.W. by N.	Golconda,	6 W.	Mullangoor,	85 N.E.
Aurungabad,	265 N.W.	Jaffierabad,	256 N.W. by N.	Mungahpett,	148 E.N.E.
Beeder,	78 N.W.	Jaulnah,	240 N.W.	Omrawutty,	250 N. by W.
Bongneer,	30 E.N.E.	Kulburga,	110 W.	Puralnda,	200 W.N.W.
Chinoor,	135 N.E. by N.	Kullianee,	106 W.N.W.	Raichoor,	110 S.W.
Davercondah,	56 S.E.	Kummummett,	110 E.	Ramgeer,	110 N.E.
Dowlatabad,	285 N.W.	Mahoor,	180 N. by W.	Suggur,	115 S.W. by W.
Eidgeer,	96 S.W.	Maiduck,	53 N.N.W.	Warungul,	84 N.E. by E.

Hydrabad is a large city, densely inhabited by Moslems, Patans, and Hindoos; but the first class greatly predominate, and are the most turbulent and ferocious set of ruffians within the limits of India. Riots and tumults are of almost daily occurrence, and are rarely checked without the interference of the military. The state of morals is very low; unnatural crimes are so common that they form a topic of ordinary conversation. An officer who resided a short time in the city declared that, "compared with Hydrabad, Sodom would be found innocent, and Gomorrah the perfection of purity." The lives and properties of the nobles, merchants, and bankers, would not be safe for a single day were the British troops withdrawn; the crowds of half-starved ruffians that infest the streets would plunder the city, but for the awe in which they are kept by the garrison. There are few manufactures of importance; the principal are silks interwoven with gold, called kinkaabs, turbans, and small ornaments. The British subsidiary force, with the Nizam's contingent, are stationed at some distance on the outside of the city, in the cantonments of *Secunderabad* and *Bolarum*. They consist of about 12,000 men, one-tenth of whom are Europeans; the whole are kept in a high state of discipline and efficiency. A fine house built in the European style, from the design of a British engineer officer, was recently erected by the Nizam for the British resident. The population is estimated at 80,000. The neighbourhood of Hydrabad is beautiful and highly diversified, meriting the character which an old

traveller gave of Italy,—"It is a paradise inhabited by devils."—(*Beveridge*, II. 75.) The fort of *Golcon* 6 miles W. of the city, is the depository of the Nizam's jewels and treasures; it is strictly guar and no stranger is permitted to enter it; but the bankers of Hydrabad are allowed to have ho within the fort for the security of their property. It is built on a rocky ridge, and has some re blance to the castle of Edinburgh, but the rock is not so high nor so abrupt; and at the distanc 600 yards from the fort, on a plain, are the tombs of the kings of Golconda, a dynasty who ruled this part of India in the 16th and 17th centuries. The tombs present several splendid specimen the Saracenic style of architecture, and consist generally of square buildings surmounted by bull domes, which are highly decorated. The diamond mines, for which Golconda has acquired so m repute, are not near the fort, but at the base of the Neela-moolla mountains, between the Kris and Pennar rivers. They are now exhausted and deserted. *Ajuntah*, a village, beyond which is celebrated *Ajuntah-ghaut* or pass, leading from the table-land down to the valley of Khandeish. descends about 800 feet with a gentle declivity of about 1 in 25. *Argaum*, a village 40 miles W. b of Ellichpore, where a battle was fought in November 1803 between the British, under Colonel W lesley (Wellington), and the forces of Scindiah and the Rajah of Berar, the latter of whom was c pletely defeated. *Assaye* or *Asye*, an insignificant village at the confluence of the rivers Ketnah Juah, 50 miles E.N.E. of Aurungabad, is celebrated for a decisive victory gained by the British tr under Wellesley over the combined armies of Scindiah and the Rajah of Berar, 23d September *Aurungabad* is still a large city, though greatly fallen from its former grandeur when it enj the favour of the Mogul emperor Aurungzebe, whose name it bears. It is situate in a hollow, the banks of the Kowlah, a mountain stream which separates the city from a suburb called *Beg poora* (Lady's-town), the communication being preserved by two substantial bridges. Nearly the town is in a state of decay and ruin; but the population still amounts to about 60,000. Aur gabad is the station of a British political resident, and the head-quarters of a portion of the Niza army, under British officers and control. The cantonments stand about a mile S.W. of the upon a rocky plain, which is free from the malaria by which the banks of the Kowlah are fested. Aurungabad contains the palace of Aurungzebe, and the tomb of his favourite wife Ra Dooraunee. The tomb resembles the Taj-mahal at Agra, but is built of coarser materials, with the defects and few of the beauties" of its model. The tomb of Aurungzebe himself is at *Roza* small town 8 miles N.W. of Dowlatabad. *Beeder*, a large but decayed city, was formerly the capit a *soubah* or province of the Mogul empire. *Dowlatabad*, the Hindoo *Deoghur*, one of the most rem able fortresses in the Deccan, 7 miles N.W. of Aurungabad, is an isolated mass of granite, about yards distant from the hills which stretch to the north and west, which rises 500 feet above the pl For nearly a third of the height the rock has been scarped like a wall, and presents all round a pendicular cliff. Above this the hill assumes a conical form, on the peak of which is the Niza flag-staff, and a large 24-pounder. The only access to the fortress is by a sloping passage cut in body of the rock, and carefully secured. Strong as it is, and apparently impregnable, Dowlata has nevertheless been taken several times, and is now of small importance, as it does not comm any road, pass, or district of country. At the foot of the rock is the pettah or town. At *Ellora*, a miles N.W., are celebrated cave temples. *Ellichpore*, the former capital of the Mogul provinc Berar. *Gawulgurh*, a fortress, 32 miles N.N.W. of Ellichpore, was stormed by the British tro under Wellesley and Stevenson, 14th December 1803. *Jaulnah* or *Jalnah*, a British military stat situate in an open fertile country, on the banks of the Ketnah, with a small but strong fort. *Mal* is a hill fort, three miles in circumference, consisting of walls of solid masonry, with parapets loop-holes for musketry. The town is in ruins, and would have been quite deserted had it not b a place of peculiar sanctity, in consequence of containing a temple of the goddess Bhowani, to wh pilgrimages are made from every part of the Mahratta country. *Omrawutty*, a large town, the c mart of the Deccan, and the residence of several rich bankers, is three miles in circumference, is surrounded with a stone wall.

BERAR, or the KINGDOM OF NAGPORE, is situate chiefly in Gundwana and Orissa, between Nizam's territory on the south-west, the Northern Circars on the south-east; the ceded distr on the Nerbuddah on the north-west, and the ceded districts of Gundwana on the north-east. extends about 330 miles from N. to S., and 300 from E. to W., and comprises about 56,000 square E lish miles. Berar is fertile in dry grains; peas, vetches, flax, sugar, betel, and tobacco, are also rai The wheat is reckoned the best in India, and, with maize, forms the principal food of the people. large proportion of the country has been brought into cultivation since it came under British cont The sovereign is the Bhoonslah rajah, recently a feudatory of the Mahratta empire, who is allowe maintain a standing army of only 1000 horse. The principal towns are:—

NAGPORE, the capital, N. lat. 21° 9′; E. long. 79° 45′; 600 miles W. by S. of Calcutta, 420 E.N of Bombay, 570 N. by W. of Madras.

Ajmerghur,	220 N.E. by E.	Dhumterry,	118 E.	Pownar,	44 S.W.
Amboora,	35 E.	Hinghenghat,	50 S.S.W.	Pownee,	36 S.W.
Bellood,	126 E.	Konkeir,	156 E. by S.	Raeepore,	150 E.
Bustar,	240 S.W.	Kyraghur,	112 E.	Ruttunpore,	210 E.N.E.
Byraguth,	240 E. by S.	Lanjee,	86 N.E by E.	Sanguddee,	48 E.S.E.
Chandah,	74 S. by E.	Pandoorna,	48 N.W by W.	Wyragur,	75 S.E.
Comptah,	74 N.E. by E.	Pertabghurgh,	66 E.S.E.		

Nagpore or *Nagpoor* is a large town, rather more than 5 miles in circuit, and contains about 80 inhabitants. The greater part of the houses are merely mud hovels, arranged along narrow wind paths; but there are also several lofty houses roofed with red or black tiles, and handsomely or mented with stucco. The town contains two palaces, the one possessed by the Goond-rajah, the scendant of the former sovereigns of Gundwana, who has a small allowance, barely sufficient for subsistence of his family; and the other, a new palace, inhabited by the Bhoonslah rajah, a small beautiful building, consisting of stone walls covered with stucco, and adorned with highly car balustrades. Nagpore has a few manufactures of silk, cotton, arms and accoutrements, and a c siderable transit trade. The neighbouring country is fertile, and contains many beautiful garde but scorpions are abundant among them. The British residency and fort on the Seetabuldee h which adjoin the city, are now garrisoned only by a small detachment of infantry, relieved at st periods from the cantonment at *Kamptee*, about 9 miles distant N.E., on the left bank of the Kha river; which has been selected in preference to the original station near Nagpore, on account of superior advantages. The change has proved equally beneficial to the health and to the moral the soldiers. The force usually consists of about 6000 men. *Ramteak*, 22 miles N.E. of Nagpore, within the British territory, is a place of great sanctity among the Hindoos, who have numer temples all over the hills. *Chandah*, a walled town 3 miles in circumference, with a tolerably str citadel in the centre, stands on the confines of a dense jungle, and is protected on two sides by a l and on the other sides by deep ravines, broken ground, and the sandy bed of river.

The Rajahs of SATTARAH, KOLAPORE, SAWUNTWARRE and others in the Deccan, are Mahr princes. The first possesses a large territory in the old Mogul province of Bejapore or Visiapore, is the descendant of Sivagee, the founder of the Mahratta empire. The rajahs were for many y

kept prisoners at Sattarah, while the government was administered by their hereditary *Peishwah*, who resided at Poonah; but, on the downfall of the latter in 1817, the sovereign was restored to his throne by the British Government, with a considerable portion of the Mahratta territory. The territories of Kolapore and Sawuntwarce are petty states; the former in the Deccan, to the south of Sattarah; the latter in the Concan, to the north of Goa. *Sattarah* is a strong hill fort, and town, 47 miles S. of Poonah. The British cantonment at Sattarah is beautifully situate in a lovely valley, which is surrounded by towering mountains. The summer retreat of the Europeans of Sattarah and Western India, is a spot on the *Mahabaleeshwar hills*, 30 miles N.W. of Sattarah, computed to be 4500 feet above the level of the sea, where several pretty bungalows have been erected, also a sanitarium for invalids, and a church. The view is most extensive and magnificent, including a great part of the Concan, and the sea at the distance of 30 miles. Four miles from the sanitarium, at the village of Mahabaleeshwar (*i. e.* the great and good God), are the two sources of the river Kistnah or Krishna, over whose sacred waters are placed large and curious temples, in each of which the stream, issuing from the mouth of a figure of the sacred bull Nandi, is received into a small tank, whence it flows through a beautiful and fertile valley. The climate of the hills is often cold enough to render fires necessary, and is found to be highly renovating; fogs are prevalent in autumn, but produce no unpleasant or dangerous effects. The walks and drives about the hills are numerous and beautiful. The rajah is constructing a great *bund* or dam for a tank on the hills; and other great public works, as bridges and roads, are in progress throughout his territory. From the village of *Mhar*, on the western side of the Ghauts, there is a conveyance by boats to Bombay. The hills are overlooked by *Pertabghurgh*, the finest fort in the Deccan, built by Sivagee, and containing a temple of great sanctity, which is visited yearly by his descendant, the rajah. The fort is now abandoned as a military station, and contains only a few seapoys for the garrison, and a few Brahmins for the service of the temple. *Bejapore*, *Bijapur*, or *Vejapore*, "the Palmyra of the Deccan," a large decayed city, 125 miles E.S.E. of Sattarah, is an immense mass of ruins, and of half-decayed tombs, palaces, mosques, caravansaries, and other buildings of every kind. It was formerly the capital of a powerful kingdom, ruled over by the Adil Shahee dynasty, the last of whom was subdued A.D. 1685, by the Mogul Emperor Aurungzebe, who made it the capital of one of his provinces Bejapore is said to have contained 984,000 inhabited houses, and 1600 mosques. Though not so totally abandoned as some other famous cities, it contains a very scanty population, composed chiefly of Moslem priests and religious mendicants attached to the mosques, poor Mahrattas, and some very orthodox Hindoos. The walls of the citadel and principal buildings are of hewn stone. *Punderpore*, 86 miles east of Sattarah, on the right bank of the Beema, is a very prosperous and populous Mahratta town. It is a holy city, and has a temple of peculiar sanctity, to which vast numbers of pilgrims resort. There are also in the city 12 large palaces belonging to the principal Mahratta chieftains, each strongly fortified, and proof against any attack without guns. In former times these chiefs used to visit Punderpore annually, either in person or by deputy; but the concourse of ordinary pilgrims still remains undiminished.

TRAVANCORE extends along the coast of Malabar, 140 miles northward from Cape Comorin, by about 40 in breadth. The whole territory is in the highest degree picturesque and beautiful, consisting of hills, valleys, and mountains, watered by numerous streams, and covered with magnificent forests. Elephants, buffaloes, tigers, monkeys, and apes abound in the woods. The produce consists of rice, pepper, betel, cocoa nut, tobacco, cassia, maize, long nutmegs, and wild saffron. COCHIN, a small territory, adjoins Travancore immediately to the north, and consists of a succession of narrow valleys watered by small streams, where rice is cultivated. The mountains are covered with forests, and the groves are studded with palms, jacks, mangoes, and plantains; the forests abound with teak, ironwood, blackwood, and jackwood. The chief exports are pepper, cardamums, teakwood, sandalwood, cocoa-nuts, coir, cordage, cassia, and fish maws. *Trivandrum*, the capital of Travancore, is a populous town, 60 miles N.W. of Cape Comorin. *Anjengo*, *Quilon*, *Alipee*, or *Alipelly* or *Aulapolly*, are seaport towns on the coast northward. *Cochin*, a large town 3 or 4 miles in circumference, was formerly the capital of the Dutch possessions in India, but is now very much reduced, and contains only 10,000 inhabitants. It is situate at the mouth of a sort of river, which is entered over a dangerous bar, having 17 or 18 feet at high water of spring tides. On the outside of the bar the anchorage is good, and within, the river expands into a fine estuary, 3, 5, and 6 miles wide, 12 miles long, and deep enough for the largest ships. As a place for ship building Cochin is still superior to all the ports on this side of India, except Bombay. The river communicates with the *Backwater*, a natural system of inland navigation, which extends parallel with the coast from Chowghaut in Malabar to Trivandrum, a distance of about 170 or 180 miles, being sometimes only a few hundred yards, at others, 3 or 4 miles from the sea, varying in width from 12 miles to 200 yards, and in depth, from a few feet to many fathoms. Into this backwater, as a grand trunk, all the numerous rivers and streams which flow westward from the Ghauts are discharged. It communicates with the sea by six openings, the only one of which that is navigable for ships is at Cochin.

MYSORE, a territory of considerable extent in the southern division of the table-land formed by the converging of the Eastern and Western Ghauts, was constituted a kingdom in 1799, in favour of the descendant of the ancient rajahs of Mysore, who had been dethroned by Hyder Ali. But his Highness having been guilty of the grossest misrule, was superseded by the British Government in 1833, and his states are now administered by officers of the Madras presidency.

SIKIM is a small principality in the hill country between Nepaul and Bhotan, containing about 4400 square miles. The chief town is *Sikim*, on the west bank of the Jamikuma river, which rises on the south side of the Himalayas, and opposite the town, separates into two branches, that flow round a large mountain, upon the top of which is a stronghold named *Tasidong*. *Darjeling* or *Darjelling* or *Dorjeeling*, 36 miles S.E. of Sikim, and 340 north of Calcutta, has been fixed upon for a sanitarium. It can be reached from Calcutta in four days, and steam-boats can ascend the Teesta to *Kishengunge*, which is only one day's journey from the hills.

The KINGDOM OF OUDE is situate in the basin of the Ganges, to the north of Allahabad, and contains about 25,300 square miles, being about 250 miles in length, by 100 in breadth. The whole surface is flat, extremely fertile, well watered, and produces abundantly wheat, barley, rice, and other grain, sugar, indigo, opium, and all the richest articles used in India. The kingdom is governed by the hereditary vizier of the Mogul empire, a descendant of Saadut Khan, a private horseman in the Mogul army, who obtained the *soubah* of Oude in 1722. In 1819 the Vizier-Soubahdar, with the sanction of the British Government, assumed the sovereign title of *Padishah* or king, thereby renouncing his nominal dependence on the Mogul emperor; but the government is of the worst description, and the people are sunk in poverty and misery. *Lucknow*, the capital, is situate on the right bank of the river Goomtee, 650 miles N.W. by W. travelling distance from Calcutta. Great part of it consists of narrow dirty streets, with mean clay houses and abounds with beggars. There are, however, some fine streets, with handsome houses, and well filled bazaars; and the king's palaces, the tombs, and principal mosques, built in a highly ornamental style, display considerable splendour. Population about 500,000. *Constantia*, the residence of the late General Claud Martin, by whom it was built at the cost of about £150,000, stands in the neighbourhood. *Fyzabad*, the former capital, is situate on the right bank of the Gogra, 80 miles E. of Lucknow; and is still of considerable extent, with a numerous population. A few miles distant to the eastward, are the ruins of *Oude* or *Ayodhya*, the ancient capital of the demigod Rama, situate on the banks of the Gogra, which is still resorted to by numbers of pil-

grims, who walk round the supposed sites of its temples, bathe in its sacred pools, and perform other ceremonies. Oude is said to have been built by Menu, the legislator of India, and to have been a very large and splendid city. The other principal towns are: *Beraytch*, *Bulrumpore*, *Tandeh*, *Biswa*, *Khyrbad*, *Shahabad*, *Roy-Bareilly*, and *Manickpore*.

BUNDELCUND or BUNDELKHUND is an elevated country to the south and south-west of Allahabad, consisting of parallel ranges of mountains supporting successive table-lands. Part of it is within the immediate territory of the British Government; the remainder is divided among the petty princes of *Rewah*, *Sumpthur*, *Jhansi*, *Jalown*, *Oorcha* or *Tehree*, and *Dutteeah*.

BHURTPORE is a small state to the westward of Agra, inhabited by Jauts, who originally migrated from Moultan. The inhabitants are descended from a low Sudra caste, and are distinct from the Jauts, or old Moslem peasantry of the Punjab. *Bhurtpore*, 34 miles W. of Agra, was a strong fortress, which twice defied the British power. In 1805 it maintained an obstinate defence against Lord Lake; but in 1826 it was again besieged, taken by storm, and its ramparts demolished. The Rajah has another fort named *Deeg*, 22 miles W. by S. of Muttra.

The Rana of DHOLPOUR, BARREE, and RAJAH KAIRAH, acquired these possessions in 1804, in exchange for Gwalior and other hereditary estates surrendered to Scindiah and the British Government. His revenues amount to about £50,000 a-year. His ancestors were, in the beginning of last century, Zemindars of Gohud, then a petty village, but raised to a town and the capital of a principality by their warlike qualities and industry. They were afterwards tributaries of the Mahratta empire, and latterly of Scindiah. The capital is *Dholpour*, a considerable town about a mile from the left bank of the Chumbul, and 40 miles S.S.W. of Agra.

BHOPAL is a considerable territory in Malwah, or Central India, extending about 120 miles along the right bank of the Nerbuddah, and including an equal extent of the Vindhya mountains, with a portion of the table-land; altogether above 7300 square miles. The surface is very uneven, and full of jungle; but the soil is generally fertile, especially in the valleys. The dominant people are Patans, who were established here in the 17th century by Aurungzebe; the state was constituted in its present extent by the Marquis of Hastings in 1817. The principal towns are *Bhopal*, *Islamnuggur*, a fortress 5 miles N. of Bhopal, and *Ashtah*. In Malwah are also situate the small principalities of *Dhar*, *Dewas*, *Rutlaum*, *Sitana*, *Nursinghur*, *Amjheera*, &c. *Dhar*, is an ancient city once containing 20,000 houses, but has now only about 5000, which are surrounded by a mud wall. The Rajah also possesses *Burwiah*, a town of 3300 houses, 24 miles N of Bhopal.

HOLKAR or HOLCAR, one of the principal feudatories of the late Mahratta empire, whose dominion, at the beginning of the present century, extended over a large portion of Central India, is now reduced to the possession of a small territory of 4245 square miles, lying chiefly in the valley of the Nerbuddah, but extending also over the Vindhya mountains into the table-land of Malwah, the extremities being about 120 miles distant N.S. His capital is *Indore*, a small town in Malwah, 456 miles N.E. of Bombay. In 1840 an English school for native youth was established at Indore by Sir C. M. Wade, the British resident, to be supported by contributions from the sirdars (officers of government) and rich natives of the city. *Mhow*, or *Mow*, 10 miles S. of Indore, and 2019 feet above the level of the sea, is a cantonment for British troops, who have a depot for their stores in the citadel of *Jaum*, a small town 22 miles further south, at the head of a steep but much frequented ghaut, or pass, which has a descent of 1632 feet down to *Mundlesir*, a small town on the Nerbuddah, with a well built fort of masonry, and a British cantonment. *Mhysir*, 8 miles W. of Mundlesir, also on the right bank of the Nerbuddah, is a city with 3500 houses, a large fort, and several beautiful temples. *Mundutta*, 35 miles E. of Mundlesir, and 42 S.E. of Indore, a small town on an island, which rises from the Nerbuddah in the form of a hill of moderate height, contains a pagoda dedicated to Ongkar, the phallic emblem of Mahadeva-Siva. It is one of the twelve places where the deity is considered to be peculiarly present; he is known here in the form of the mystic syllable OM. About three-quarters of a mile east is a sacrifice rock, called Bheercailah, from which devotees throw themselves, during the feast of Cartic-jattra. *Woon*, or *Wone*, a decayed town also in Holkar's territory, 27 miles S. by W. of Mhysir, was formerly a large city, said to have contained 99 Jain temples, of which the remains of about 20 can still be traced. *Maundoo*, the ancient capital of Malwah, situate 27 miles S.W. of Mhow, is now completely deserted, but still contains numerous remains of fine buildings overgrown with jungle.

The GUICOWAR or KING OF BARODA, also one of the feudatories of the Mahratta empire, possesses a large scattered territory in Gujrat, on both sides of the Gulf of Cambay, which comprises altogether about 35,000 square miles, including the peninsula of Kattiwar. The peninsula, however, does not belong to the Guicowar in absolute sovereignty; but is possessed by a great number of petty chiefs, of whom 137 were tributary to the Peishwah, and 111 to the Guicowar. The Peishwah's share of the tribute was ceded to the British Government in 1818; and these turbulent chiefs are now not only secured against external aggression, but are kept at peace among themselves by their powerful masters. They are free to exercise sovereign authority on their own estates, and are exempted from the authority of the British courts of law. The peninsula is hilly in the interior, and, being rather scantily supplied with water, is not productive of grain; but has everywhere abundance of the coarse vegetation suited to the soil. The coasts are full of creeks and inlets, which used to shelter numerous pirates, who easily escaped from cruizers, through the difficulty of the navigation. The Guicowar is the descendant of Piliajee Guicowar, the potail of a Mahratta village, who, early in the 18th century, assumed sovereign power. His capital is *Baroda*, or *Behroda*, *Brodera*, or *Brodra*, a large and populous city, with considerable trade, 240 miles N. by E. of Bombay, and about 12 miles E. from the estuary of the Mhye. The British cantonments are prettily situate two miles from the city. The other principal towns are: *Cambay*, at the head of the Gulf to which it gives its name, an ancient and renowned city, now very much reduced; *Puttun Sidhpore*, *Rhadunpore*, *Pulhanpore*, and *Deesa*, to the eastward of the Runn of Cutch; *Durraungdra*, *Hulwud*, *Mallia*, *Moravee*, *Wankaneer*, *Surdham*, *Paulytanna*, *Jaffrabad*, *Puttun-Somnath*, *Villawul*, *Joonaghur*, *Kotyana*, *Poorbunder*, *Juggut*, *Bate*, *Nowanuggur*, and *Jooria*, all in the peninsula of Kattiwar. *Puttun*, situate near the right bank of the Surraswuttee river, 64 miles N.N.W. of Ahmedabad, represents the ancient *Nehrwalleh* or *Anhulwarra*, the capital of Western India, a great emporium of commerce, and the residence of powerful princes, styled Balcaraes or Balharas, from the 8th to the 14th century. To attest the former splendour of this great city only four architectural relics exist; everything available was carried off in the 15th century to build Ahmedabad. *Puttun* or *Puttan-Somnath*, on the southern coast of Kattiwar, contains the remains of a celebrated temple of Somnath (Lord of the Moon), once possessed of immense wealth, which was plundered by Sultan Mahmud of Ghuznee, A.D. 1025. A Mahratta princess, Ahalya-Bhai, wife of Holkar, subsequently erected near the same spot a temple to Siva, which is still visited by pilgrims. The remains of the ancient temple stand on a bold promontory, visible at the distance of 25 miles; and the town contains abundant evidence of its original character as the capital of an extensive Hindoo territory. Its walls and gates are rich in the remains of Hindoo architecture, and the magnificently chiselled shrines of Hinduism form the bases of the finest mosques. It is now entirely Mahometan, but almost an entire ruin.—(*Burnes' Jour. R. As. Soc.* V. 105. *Postan.*) *Paulytanna* or *Palitthana*, is situate at the eastern base of *Satrunja*, the mount sacred to Adinath, the first of the Jain hierophants. A flight of steps cut in the rock lead to the top, through a variety of shrines, amongst which that of Adinath is the most holy.

Joonaghur, 46 miles N. by E. of Puttun-Somnath, is a large Moslem town with 16,000 inhabitants, and the capital of a Nawab. Near it is an ancient Rajpoot citadel called *Upah-kote*, a place of great historical interest, but now deserted; and a few miles E. of the town is the sacred *Mount Girnar*, a granite peak rising to the height of 2500 feet from an extensive plain. On a small flat near the summit are the walls of a fort inclosing a group of seven Jain temples of exquisite beauty, filled with idols, which give the place a peculiar sanctity. The summit consists of two peaks, the higher of which, the Gunidattara, is crowned with a small white temple kept by a Gosain, to which the ascent is very difficult. Great numbers of Banians, pilgrims, devotees, and travellers daily ascend the sacred mount; and in February a religious assembly or jattrah is held, when thousands of people attend. Outlaws and religious devotees are the usual inhabitants of Girnar; the scenery of the mount is of great beauty, unequalled even by that of the Ghauts.—(*Postan's Western India.*) *Dwaraka*, *Dvoarka*, or *Dwarrica*, near the western extremity of Kattiwar, is a small walled town with a magnificent pagoda dedicated to Krishna, which is visited by pilgrims from all parts of India. About 20 miles N. by E. of Poorbunder are the remarkable and splendid ruins of the ancient city of *Ghumli* or *Bhumli*, formerly the capital of the Ranas of Jaitwar, whose territory comprises that part of the coast within 30 miles of Poorbunder. (*Jour. R. As. Soc.* V. 73.)

CUTCH or KACH'H is a long narrow peninsula between the gulf of Cutch and the Runn, 165 miles in length, and varying in breadth from 15 to 52 miles. Through the middle, from east to west, stretches a range of hills called *Lunkhi-Jubberi*, from 1 to 8 miles in breadth, forming a mass of volcanic rock, destitute of wood, soil, and water, except during the rains, when numerous torrents pour down its sides. North of the Lunkhi is another range running parallel, and nearly mixing with it; the valley between the two ranges, and the plain between the Lunkhi and the sea, from 20 to 30 miles broad, interspersed with detached hills, form the arable part of the province. Close to the sea-beach is a high bank of sand, called *chigo*, which extends from the Indus to the gulf, and makes the country appear lower than the sea. Along the north side of Cutch, a tract of land, called the *Bhunni* or *Bunnee*, 40 miles long, and in few places less than 7 wide, and nearly separated from the rest of the province by an arm of the Runn, produces most luxuriant pasturage. The eastern part of Cutch is also a sort of peninsula, called *Wagur*. To the north of the Bhunni are two large islands, named *Puchum* and *Khureer*; and further east, the large island of *Sauntulpoor* so nearly occupies the neck of the Runn as to leave only two narrow straits between Cutch and the mainland. Nearly in the centre of Cutch is a conical hill called *Nunow*, well known to navigators, who distinguish it at sea by the name of *Chigo*; and a little to the east and north of Nunow is *Warra*, a remarkable hill, quite flat on the top, and with its edge so evenly defined as not to have a notch observable. Cutch consists mostly of secondary formations, such as laminated shales, a series of sandstones and shales inclosing beds of iron ore and coal, sometimes tolerably good, but generally very impure. The latter series forms the central and principal part of the province, where it rises into hills. The iron ore is smelted by the natives to some extent near the town of *Doodye*. In the southern part of the province is a range of hills composed entirely of basalt and other volcanic matter; traces of volcanic influence occur besides in different places, and the country suffers occasionally from violent earthquakes, one of which, in 1819, buried the town of Sindree, formed a large lake on the Koree or eastern branch of the Indus, raised a great embankment across its channel, which is now called the *Ullah-bund* (God's dam), and destroyed 1500 houses in the town of Anjar, and 7000 in Bhooj. The hills seem to have recently cooled from a state of fusion, the masses of rock are black and bare, thrown together in wild and chaotic forms, in many parts presenting large chasms, down which, during the monsoon, rapid torrents sweep into the plains, irrigating the valleys, which are covered with stunted brushwood, and afford good pasture for numerous flocks of sheep and goats. The vegetation, however, falls with the rains, and a soft sandy soil is again the principal feature of this sterile land. A few fields in the vicinity of the villages are cultivated; but the rest of the country presents nothing but a rocky and sandy waste, in many places scarcely relieved by a show of feeble vegetation, which consists of a stunted, thorny sort of brushwood, and a singular species of bramble called the *kheie*. Water is scarce, and is often brackish. The rains are usually slight; and the climate may be considered healthy, though at the close of the rainy season fever is prevalent, and, during the cold season, rheumatism. For nine months in the year the atmosphere is temperate and agreeable; in the hot months the temperature is high, and the weather stormy; in winter the cold is frequently intense, and ice is very commonly found on water placed in vessels which are exposed to the air during night. The produce of the land under cultivation is not sufficient to support the scanty population, so that Cutch, even in the best seasons, is dependent on Sinde for supplies of grain. But this deficiency of vegetable food is amply compensated by the abundance of animals. Perhaps no country of equal size so teems with animal life as the whole province, which literally abounds with game and wild beasts. Cutch is famous for a breed of horses, of very singular appearance, having a dip in the back, which looks as if the piece had been cut away. The wild ass, which is peculiar to the Runn and its borders, is singularly marked, and stands about 13 hands high; it is of a light fawn colour, with a broad dun stripe down the middle of the back, and is a handsome and well-shaped animal. The wild ass delights in the salt vegetation of the Runn, and is sometimes seen in herds of 60 or 70, but is so fleet as to defy pursuit; it is, however, taken in pitfalls, and the flesh is considered a delicacy by the Moslems, while it is abhorred by the Hindoos, who, on the contrary, eat the hog, which the Moslems hold in abhorrence. There are also great numbers of pea-fowl, which the Hindoos deem sacred. The moisture of the Runn is exceedingly conducive to the production of insects; musquitoes are seen in thick clouds; and, during the monsoon, the people of the Bhunni are obliged to quit their houses, and seek refuge in Cutch from the swarms of flies. The inhabitants of Cutch are partly Brahminical Hindoos and partly Moslems, the numbers of both being nearly equal. The dominant class are the Jarejahs (see *ante*, p. 695), who hold their lands of the Rao by military tenure, and have themselves numerous retainers called Grasias, who owe them immediate allegiance. There is also a class of warriors called Meyannahs, who were originally shepherds, but have become a fierce and warlike tribe, noted as robbers and mercenaries. They are Moslems, and can muster 3000 warriors. The total population of Cutch is only about 350,000. There is now some prospect of improvement in their condition; the country is protected by a British subsidiary force; the tyranny and misrule of the Rao and his military chiefs have been completely checked, and peace prevails to foster and reward industrious habits. The mariners of Cutch are a fearless and enterprising race; and for centuries past have traded to the Red Sea, the coasts of Africa, Ceylon, and even the Chinese Sea. Their principal exports consist of cotton cloths, in return for which they receive dates, coffee, dried grapes, antimony, senna, and coloured mats from the Red Sea; elephants' teeth and rhinoceros' horns from Zanzibar. Their moallims or pilots are singularly intelligent and well informed.

Bhooj, the capital of Cutch, is a large town of 30,000 inhabitants, surrounded with a strong, well-built wall. The streets are narrow, dirty, and rendered scarcely passable by herds of sacred bulls; the Rao's palace is a large white stone building, decorated with beautiful carvings and fine fret work. The British cantonment is about a mile from the city, and half a mile N.E. is the citadel or fortress, called *Borjeah*, on a hill. On 16th June 1819 both the city and the fort were nearly destroyed by an uncommonly violent earthquake. *Mandavee* or *Mindivee*, the principal sea-port, is situate on the south coast; it enjoys a considerable trade, and boat-building is carried on to some extent. On the same creek, two miles inland, are the ruins of a city called

Raipore, but supposed to have been the ancient Mandavee, which is still called Raipore in official documents. *Anjar*, a fortified town on a hill near the gulf, in the most fertile part of Cutch, was for some time the seat of the British residency, and contains a Hindoo temple, where at one time about 3000 rats were kept by an old Gosain, who summoned them to their meals three times a-day by the tinkling of a bell. At *Danodhar*, on a lofty hill, 20 miles S.W. of Bhooj, is a monastery of Kanuphtics, forming a kind of brotherhood, who dispense food and shelter to all applicants, without distinction of creed, country, or caste. They possess the revenues of about 20 villages, and are reputed rich; their superior is a rajah, who is treated by the Rao with high consideration. At *Mhur*, a village west of Bhooj, is a fraternity of Kaprias, about 120 in number, governed by a rajah, who enjoys many immunities and privileges; like the Kanuphtics, they are sworn to celibacy. They possess five villages, the revenues of which they devote to the charitable purpose of supplying with food all who apply. *Luckput*, or *Luckipat*, or *Lak'hpat*, is a fortress, situate on elevated ground, 39 miles from the sea, and about a mile from the left bank of the Koree, once the most easterly branch of the Indus, but now a mere tide creek or estuary. The walls, defended by numerous towers and bastions, with guns of all sorts and sizes, inclose a space about 800 yards square, of which not more than a third is occupied by houses.

RAJPOOTANA, RAJWARRA, or RAJAHS'TAN, is the name of a country of indefinite extent, situate in Hindústan, mid-way between the Indus and the Ganges, and traversed diagonally by the Aravulli mountains. The dominant inhabitants are the Rajpoots, from whom it takes its name. The country, in its present dimensions, is divided among the Rajahs of *Oudeypore*, *Jyepore*, *Joudpore*, *Kotah*, *Boondi*, *Alwar* or *Ulwar*, *Bicanere*, *Jeysulmere*, *Kishengurh*, *Banswarra*, *Purtabgurh*, *Dongerpore*, *Kerouly*, and *Sirohi* or *Serowy*. The territory of *Oudeypore* is also called Mewar, and consists chiefly of a table-land in the angle formed by the Aravulli mountains, and the hills which extend along the left bank of the Chumbul. It is hilly, well watered, and well adapted for cultivation. *Oudeypore* or *Oodeypore*, the capital, is situate in a valley 60 miles in circuit, which has only one entrance passable for carriages, 2864 feet above the level of the sea, and contains two lakes of considerable extent. The city is built on an elevated ridge of rocks. The Rana of Oudeypore is of the most ancient and purest descent of all the Rajpoot princes, and is on that account the most honoured among them, though not the most powerful. *Chittore*, the ancient capital of Mewar, is situate 70 miles E.N.E. of Oudeypore, and contains a very celebrated fortress, built on a steep hill above the town. *Nat'dwara* (the portal of God) 22 miles N.E. of Oudeypore, on the right bank of the Bunass, is one of the most remarkable temples in India. It was founded in the reign of Aurungzebe, when Vishnu was exiled from his ancient temple in Vrij, on the Jumnah, and is one of the best frequented places of Hindoo pilgrimage. A considerable town has grown up around it, and the priests and their retainers are supported by contributions from all parts of India. *Komulmair* or *Comulmere*, a formidable hill fortress, 45 miles N. by W. of Oudeypore, 2500 feet above the level of the sea, contains a Jain temple dedicated to the supreme God, which is considered as among the most beautiful of the shrines of India. *Jyepore* or *Jeypur*, *Kishengurh*, *Kotah* or *Harraoutee*, *Boondi*, *Kerouly*, and *Alwar*, are situate to the north-east and east of Mewar, and partake of the same character, being hilly and well watered, fertile and populous, though in some parts arid and desert, particularly in the western part of Jyepore. *Jyepore* or *Jaipore*, is a handsome well-built town, with a fine castle situate on a steep and lofty rock, 80 miles E.N.E. of Ajmere. It contains by native calculation 80,000 houses, which would give a population of 400,000. It is a magnificent city, and may challenge comparison with any other in India; it is built in a sandy plain, with streets crossing at right angles. *Joudpore* or *Marwar*, which lies to the west of the Aravulli mountains, and extends into the desert, is an arid territory of about 70,000 square miles, but generally well peopled, and valuable, producing wheat and other grains. It is traversed by the singular river Loonee or Loony, which, at the distance of 50 miles from its mouth, sends off numerous branches, intersecting a flat and fertile district of 350 square English miles, called *Nuegur*. The soil is there very rich, and wheat is its universal product; it abounds with herds of cattle, and the cows and oxen are of a superior kind. Buffaloes are also reared, and there is abundant fodder for camels. Wild hogs and game abound on the banks of the river among the peloo and tamarisk shrubs; and tigers, hyenas, and wolves are attracted by the herds. Small crocodiles are found in the pools; wild ducks and partridges are plentiful, and among the latter is the black partridge, noted for the richness and beauty of its plumage. The Nueyur is studded with villages, the chief places of note being *Gurra* and *Nugger*; the one with 200 inhabitants, the other with 1500; to the Loonee alone is the abundance of vegetable and animal life to be attributed. During some seasons the Nueyur is a sheet of water. *Joudpore* (*Judpur*, *Jhodpoor*), the capital of Marwar, 100 miles W. by S. of Ajmere, a beautiful city, filled with temples and ornamented houses, is built in a hollow, surrounded by rocky eminences, on which are three forts, the largest of which contains the Rajah's palace, a very extensive edifice, and visible from a great distance. This fort is amazingly strong, and stands on a rocky and perfectly impracticable hill. Joudpore is the centre of a very extensive trade, and contains about 60,000 inhabitants. Marwar contains altogether about 500 towns and villages; few of the towns are large, but many of the villages contain from 1500 to 2000 houses. *Pallee*, 40 miles S.S.E. of Joudpore, a large open town in a low swampy plain, but commercial and wealthy, with 50,000 inhabitants. *Nagore*, 70 miles N.N.E. of Joudpore, is a walled town with a substantial fort, famous for its manufactures in brass and iron, and containing 40,000 inhabitants. The territory of *Jeysulmere* is barren and unproductive, with little arable land. The surface is generally uneven, covered with rocks, which never rise into hills, or extend in chains, but are scattered irregularly. Not more than a third of the country will admit of tillage; the parts which are cultivated, yield good crops of the coarser grains, as bajree and moong, but no wheat; and the cotton crops are only reaped after a three years' fostering care. *Jeysulmere*, the capital, is a fine city with 20,000 inhabitants, and a fort or castle of a most commanding and magnificent appearance, 140 miles W.N.W. of Joudpore. The territory of *Bicanere* forms a portion of the Great Desert, and is flat, sandy, and destitute of water, except from wells, which are dug from 100 to 200 feet deep. The crops are very precarious, and greatly dependent on the rains. Horses and bullocks are the only articles of export. *Bicanere* (*Bicaneer*, *Bikanair*), the capital, is a large town, presenting externally the appearance of a great and magnificent city in the midst of a desert, but the interior is composed of mud huts. It is surrounded with a strong wall and towers. *Sirohi* or *Sirowy* is a small principality to the south of Marwar, at the south-west extremity of the Aravulli mountains. It contains the sacred mount *Aboo* (*Abu*, *Aboji*, *Abughad*), which is about 5000 miles round the base, and rises 5000 feet above the level of the sea. Its various elevations and platforms are covered with shrines, temples, fortresses, and tombs, adorned with sculptures and statues, which are relieved at intervals by all the varieties of wild and beautiful scenery. On the very summit is a small circular platform, containing a cavern with a block of granite bearing the impression of the feet of Data-Briga (an incarnation of Vishnu), which is the grand object of pilgrimage; but in that part of the mountain called *Dailwarra* or *Dewulwarra* (region of temples), is the most superb of all the temples of India, to which no other edifice but the Taj-mahal can be compared. It is sacred to Vrishabdeva, the first of the Jains, was erected by Bimul Sal, a merchant of Anhulwarra, one of the richest of their votaries, and attracts pilgrims from every region of India. The principal building is surrounded by numerous minor temples, the chief features of which are not mere solidity and vastness; their merits consist rather in the proportions, the endless variety and richness of the

sculptures, the extended colonnades and vaulted roofs, which give evidence not only of unbounded wealth in the founders, but also of high refinement in the arts.—(*Todd's Travels in Western India.*) The other places in Rajpootana are of little importance; the names and situations of the principal of them are arranged in the following table, with their distances from Ajmere:—

Aboo,	160 S.W.	Jyepore,	80 E.N.E.	Pokrun,	165 W. by N.
Alwur,	146 N.E. by N.	Kerowley,	160 E.	Purtabgurh,	170 S.
Banswarra,	200 S.	Kishengurh,	18 N.E. by E.	Rampoora,	97 E.S.E.
Bhilwarra,	70 S.W. by W.	Komulmair,	120 S.W. by S.	Rutlam,	220 S.
Bicanere,	125 N.W.	Kotah,	120 S.E.	Ryepore,	S.W.
Bundi,	110 S.E.	Machery,	160 E.N.E.	Sambre or Sambur,	47 N.E.
Bunaira,	S.	Mairta or Meerta,	40 W.N.W.	Sanganeer,	S.
Chittore,	110 S.	Mandulgurh,	90 S. by E.	Sawa,	S.
Chooroo,	133 N. by E.	Mokundurra,	140 S.E. by S.	Seywanah or Seywanoh,	S.W. by W.
Deedwana,	66 N. by W.	Nagore,	70 N.W.	Sirohi,	140 S.W.
Dehgong,	252	Narnol,	147 N.E.	Sojut,	73 S.W. by W.
Dongurpore,	180 S.S.W.	Neemuch,	140 S. by E.	Thurraud,	240 S.W. by W.
Fullodee,	140 W.N.W.	Nimbhera,	126 S.W. by W.	Tijara,	170 N.E. by E.
Hinglaisgurh,	144 S.S.E.	Nusseerabad,	12 S.E.	Tonk,	70 E. by S.
Jaitarun,	S.W.	Oudeypore,	130	Ummergurh,	S.
Jeysulmere,	200 W. by N.	Palce,	95 W.S.W.	Wallotra,	S.W.
Joudpore,	80 W.	Parbusir,	S.W.		
Julra-Patun,	160 S.E. by S.	Peepur,			

Kotah, a large city on the right bank of the Chumbul, is the capital of the state of Haraoutee, which extends southwards to the Mokundra range of hills; and contains *Julra-Patun*, a well-built modern town, surrounded by a substantial wall, with round bastions. *Neemuch* is a British military station, 80 miles E. of Oudeypore; it has a small stone fort, constructed for the purpose of affording protection to the wives and families of the troops, should they take the field, and of serving as a depot for military stores. The climate is very salubrious; but the scanty supply of water is drawn from wells. Neemuch is situate within Scindiah's territory; and usually contains four regiments of native infantry, one of cavalry, some artillery, and a corps of local horse.

SINDE is a large territory occupying the lower part of the basin of the Indus or Sinde, which traverses the country in numerous and ever-changing branches, along the banks of which, and within reach of irrigation are the only cultivated districts. To the eastward of the river there is not a rising ground or a stone, except the hillocks of Buckhur and Hydrabad. The country is flat and covered with bushes, till at last it joins the desert of sandhills which separates it from Rajpootana. Westward, as low down as Sehwun, the same flatness prevails to the foot of the Beloochee mountains; from Sehwun to the sea the land is rocky and barren. The delta of the Indus has a rich alluvial soil, but is poorly cultivated. The depressed shore offers no remarkable object to the eye of the mariner; the coast line is covered at spring tides. Ten miles from the sea the country is often an impervious jungle; higher up it is overgrown with tamarisk shrubs; but the greater part of it presents a naked plain of hard caked clay. Much of the land adapted for cultivation is only used for pasture, and great part of it lies waste; yet the crops of rice are extensive, and their produce far exceeds the consumption of the inhabitants; wheat, barley, juwaree, and other grains, indigo, sugar, tobacco, and hemp, are also grown. Very little labour is bestowed upon them; the seed is scattered after the inundation subsides, and the harvest is certain. Sinde, indeed, owes its fertility entirely to the Indus, without which it would be as barren as the country to the eastward. In winter the climate of the delta is delightful, being cool and bracing; ice is occasionally found in the morning, but the temperature generally ranges from 45° to 82°, and during the day is most agreeable; fogs, however, sometimes occur, but they are not very prevalent, and quickly dissipate as the sun rises. In summer the heat is excessive; at Sukur, on the Indus, 27° 43′ N. lat., in June 1839, the thermometer stood at 100° in the shade, 105° in the hospital, 123° in the seapoy's tents, and 146° in the sun. Little rain falls, but during the inundation the climate is very unhealthy; fevers, dysentery, and agues then prevail. The population is very mixed, being composed of Hindoos, Jauts, Beloochees, and various other tribes from the adjacent countries. The Seids or Sayyads (descendants of Mahomet), and Fakirs (religious vagabonds), are very numerous, and are estimated at so many as 100,000. The wealth of many families consists of their herds of horned cattle; and of their produce, hides and ghi, Kurachi exports a considerable quantity. The buffalo furnishes the principal supply. Sinde formed till lately an independent state, ruled by the three chiefs of a family called Talpoora, with the title of emirs or ameers; but, in 1839, it was reduced to subjection by the British army of the Indus, on its march to Cabul; and is now classed among the subject states. The revenue of the ameers is said to amount to £400,000 a-year. They are besides reputed to have hoarded a treasure of seven or eight millions sterling, the capture of which strongly excited the hopes of the British troops on their approach to Hydrabad, but it was saved to the ameers, by their timely submission without fighting, to the great disappointment of their unwelcome visitors. *Hydrabad* or *Haiderabad*, the chief town, is situate on the eastern bank of the Indus, 120 miles from the sea, and contains about 20,000 inhabitants, who live in mud hovels scattered about the south end of a rocky hillock, on the top of which is the fort, a mere shell, consisting of a single brick wall surrounded by a dry ditch; at the northern extremity of the hill are the tombs of the chiefs, some of which are beautiful structures. *Tatta* or *T'hat'hah*, the ancient capital, stands at the head of the delta of the Indus, 60 miles from the sea, and 3 from the river, upon a rising ground surrounded by a brick wall, and contains about 18,000 inhabitants. The town is dirty, with narrow irregular streets, and consists chiefly of mud huts, or of bricks plastered over with mud and straw. The cemetery extends for several miles, and contains a number of beautiful and magnificent tombs, erected in the days of the city's prosperity. Tatta has acquired some celebrity for the lungi, a rich fabric of silk, cotton, and gold, of variegated pattern and close texture. The raw silk in most estimation with the weavers is that from the Persian province of Ghilan. In the vicinity are the ruins of *Kullancoté* and *Saminnuggur*, places to which the natives ascribe a high antiquity. *Kurachi* or *Curachee*, between Ras Mooare and the delta of the Indus, the principal seaport of Sinde, is a large town of mud houses, with narrow, irregular, and incommodious streets, and containing no building worthy of notice. Though it has long been the commercial emporium of Sinde, no attempt has been made to improve the creek which forms its harbour; the goods have to be put into large punts or flat boats, and hauled through the mud, or carried on men's shoulders. The bazaar is very extensive; some of its streets are entirely shaded from the sun by matting. The principal merchants are Hindoos, and that people form the greater proportion of its 10,000 inhabitants. They carry on a brisk trade with Bombay, Malabar, and Arabia. The town enjoys a great celebrity for the tanning and preparation of hides, which are chiefly exported to Muscat, but are also used to some extent in Sinde. From February till October, Kurachi is the only accessible harbour on this coast. With the exception of the gardens in the vicinity of the town, the country around Kurachi is literally a waste; there being no vegetable production except the clumps of prickly pear with which the face of the ground is thickly studded; it is, nevertheless, the healthiest place in Sinde, and the prevalent diseases are few and tractable. *Fort*

Manorah, on a rocky promontory between the open bay of Ras Mooaree and the roadstead of Kurachi, guards the entrance to the harbour. Among the outlying hills which skirt the Hala mountains, about 9 miles from Kurachi, is a hot spring, the temperature of which, where it wells from the ground, is 136 Fahrenheit. The stream waters a small valley, and supplies some ponds or swamps, in which the fakirs keep numbers of tame alligators. *Bunder Vikkar* or *Vikkur*, on the Hajimari branch of the Indus, ranks next to Kurachi among the seaports of Sinde, but is an inferior town. *Dharaja*, the port of Tatta, 20 miles from the sea, is also conveniently situate for trade. *Sehwun*, a miserable collection of huts, with 10,000 inhabitants, 2 miles from the right bank of the Indus, 105 miles above Hydrabad, is a place of great antiquity, with a very remarkable castle now in ruins, which overlooks the town, and contains the shrine of a saint named Lal-shah-baz, whose tomb is a place of pilgrimage to both Hindoos and Musulmans; the neighbouring country is rich and productive. Between Sehwun and Hydrabad, near the left bank of the river, is *Hala*, a considerable town, which derives no small degree of importance from the shrine of a saint, named Pir Mukdumnu. It has also been long noted for earthenware and Sindian caps. The ruins of *Khodabad*, once the favourite residence of the Talpoor chiefs, are situated a little to the N.W. of Hala. *Bukkur* or *B'kkur*, 160 miles above Sehwun, a fortress on a rocky island in the channel of the Indus, about 800 yards long and 400 broad, is considered by the natives as impregnable, but is entirely wanting in every point which can make it a place of strength. It was ceded to the British Government by the Khan of Khyrpore in 1839. *Roree* or *Rori*, a town of 8000 inhabitants, built on a precipice of limestone and flint 40 feet high, on the left bank of the Indus, facing Bukkur. *Sukur*, on the opposite side of the river, situate on lower ground, is about half the size of Roree. In the channel of the Indus, between these towns, are several rocky islets, one of which is occupied by Bukhur, and another, *Khadja Kizr*, is noted for its sanctity. *Khyrpore*, 14 miles S.S.W. of Bukkur, a very large open town, with 15,000 inhabitants. *Larkhanu*, 14 miles W. by S. is also a large straggling town, with 10,000 inhabitants, in the midst of a date grove, on the banks of a fine canal drawn from the Indus. *Shikarpore*, a very large town 15 miles W. from the Indus, chiefly inhabited by Hindoo bankers and merchants, who have commercial connections all over the East. The houses are entirely of mud, or sun-dried brick, but the town is surrounded with gardens.

DAOUDPOOTRA, the territory of the Nawab Bhawul Khan, which extends along the left bank of the Indus and the Gharra for more than 300 miles, is only a portion of the great desert, an endless expanse of sandhills thinly covered with jhow and phog bushes, which furnish food merely for camels; the only cultivable part of the country being what is within reach of irrigation by the waters of the rivers. The Nawab is nominally independent, but is in alliance with, and under the protection of the British Government. *Bahawulpore*, his capital, is a large commercial town of mud houses, surrounded with a low mud wall, and crowded with koojur and peepul trees, on the left bank of the Gharra, with 20,000 inhabitants. It enjoys great reputation for its silk manufactures. His other towns are *Ahmedpore*, about half the size of Bahawulpore; *Derawul*, an ancient fort in the desert; and *Ooch*, *Uch*, or *Utch*, 3 miles E. of the Chenab, and 5 miles below its confluence with the Gharra, in a fertile plain, shaded with trees, and containing 40,000 inhabitants, who are miserably poor, though the neighbouring country is richly cultivated. Tobacco grows luxuriantly; indigo is also reared successfully. Wheat and other dry grains are cultivated in preference to rice, which does not form here, as in Sinde, the principal food of the people. The country abounds with game. Uch is highly celebrated for the tombs of two Moslem saints.

The PROTECTED SIKH, and other states on the right bank of the Suttlej, are about 150 in number. The country and the principal towns have been already described at page 717. The territory of the Rajah of Bissahar extends to the northern side of the Himalayas, along the valley of the Suttlej.

§ 6. *Independent States.*

The MAHARAJAH SCINDIAH, one of the principal feudatories of the late Mahratta empire, possesses a large territory of the most irregular form, which extends through the middle of Hindústan from near Baroda to the neighbourhood of Agra, a distance of 450 miles, and comprises about 42,300 square miles, with a population exceeding 4,000,000. Ranoojee Scindiah, the first of the family who attained eminence, was one of the commanders under the Peishwas in the Mahratta expeditions into Hindostan in the early part of last century; and he and his successors acted a distinguished part in all the wars and revolutions of the country down to 1817, when the present limits of their territory were fixed by treaty with the British Government. The territory is capable, under proper management, of realizing a revenue of 140 lacs of rupees (£1,400,000 sterling). The rajah is bound to aid the British Government when required, with a contingent of 5000 men; and he maintains, besides, a large military force, which, at the death of the late Maharajah, the last of the original family, in 1827, was estimated at 14,000 infantry, 10,000 cavalry and 250 pieces of cannon. The present rajah is only a distant relation, brought from the original seat of the family in the Deccan in 1827, and adopted by the widow of the late Maharajah, after his death, and married to his grand daughter. His capital is *Gualior*, a large town of 50,000 inhabitants 80 miles S. of Agra; with a celebrated fortress, built on a long flat insulated hill, half a mile in length, three or four hundred yards broad, and rising in the highest part 450 feet above the plain. The rock is for the most part inaccessible, and is surmounted by a stone rampart along its edge. It formerly belonged to the Rana of Gohud. The other principal towns, with their distances from Gualior, are arranged in the following table:—

Aggur or Augur,	216	S.W. by S.	Gohud,	23	N.E.
Bansrore,	180	W.S.W.	Hindia,	284	S. by W.
Bhilsah,	190	S. by W.	Hinglaisghur,	200	S.W.
Burhanpore,	360	S.S.W.	Jawud,	220	W.S.W.
Champanere,	380	S.W.	Khimla-sa,	150	S.
Chendarce,	120	S.	Mchidpore,	250	S.W.
Emlea,	20	N.N.W.	Mundissor or Mundesoor,	240	W.S.W.
			Nemuch,	230	W.S.W.
			Oujein,	260	S.W. by S.
			Ruttumghur,	205	W.S.W.
			Seeta-mhow,	225	W.S.W.
			Shahjehanpore,	250	S.W. by S.

Oujein or *Ougein*, which holds a high rank among the holy cities of India is situate in Malwah, 1698 feet above the level of the sea, and 350 miles N.E. by E. of Bombay. It is of the most remote antiquity, being described in the Puranas; and the Hindoo geographers and astronomers consider it their first meridian. The ancient city, however, was destroyed by some physical catastrophe; the Hindoo legends say a shower of earth buried the city and its inhabitants. The modern town is a mile N. of the ancient site; is surrounded with a wall six miles in circumference, and is very populous. At *Mehidpore* or *Mahidpore*, on the banks of the Seeprah or Siprah, 20 miles N. by W. of Oujein, Holkar was defeated by the British forces, 21st December 1817. *Burhanpore* or *Burhaunpore*, the late capital of the soubah of Khandeish, is one of the finest cities in the Deccan, and the head-quarters of a singular sect of Mahometans called Bohrah, who all actively engage in commerce, wear a peculiar costume, and retain in their form and features characteristic traits of their foreign Arabic ancestry. It is situate on the right bank of the Tuptee, 260 miles N.E. of Bombay. *Hindia* is a town and fortress on the right bank of the Nerbuddah, where the river is 1000 yards broad. *Champanere* was once a large city, whose ruins extend several miles, but are covered with jungle. A small area inclosed with a wall and inhabited by silk weavers, forms the modern town. Overlooking it the stupendous

rock of *Powan-gurh* rises abruptly from the plain to the height of 600 yards, presenting a perpendicular face except on the north side, where it is fortified with five walls. On the top is a famous pagoda, dedicated to the goddess Kali; and also the tomb of a Mahommetan saint. The fort has also an inexhaustible supply of water, but was nevertheless taken by storm by the British forces in 1803.

The KINGDOM of LAHORE, established during the present century by an enterprising Seikh chieftain, Runjeet Singh, who died in 1839, is situate in the N.W. part of India, including all the country between the Indus and the Suttlej, and from the crests of the Himalayas to the borders of Sinde. It comprehends also the narrow tract to the west of the Indus, between that river and the mountains of Affghanistan; being altogether about 500 miles in length from N.E. to S.W., by about 400 in its greatest breadth, and comprises an area of 160,000 square miles. The southern and south-eastern portions of the kingdom form part of the great plain of Western India, and consist of sandy wastes, or hard clay plains covered with jungle, admitting of cultivation only along the banks of the rivers. There, however, the soil is remarkably fertile, and produces abundantly all the necessaries of life. Towards the north-west the country is crossed by the *Jungher* or *salt range* of hills, which stretches from the Suffeid-koh in Affghanistan to the west bank of the Jhylum. The hills rise abruptly from the plain to the height of 2100 feet above the level of the sea, and support on their northern side the table-land of Taxila, about 800 feet above the level of the plains below. The Salt range has a breadth of about five miles; the formation consists of sandstone, and the bold and bare precipices rise at once from the plain. Hot springs are found in various parts of them; alum, antimony, and sulphur also occur; but their principal mineral wealth consists of salt, which has a high reputation in India, on account of its medicinal virtues; but being impure it is not fit for curing meat. About 80,000,000 lbs. are yearly extracted for behoof of the government. The salt occurs in compact glassy strata, dipping at an angle of 65° The southern part of the table-land, from want of water as well as from the presence of salt, is little adapted for cultivation, and the villages are consequently very thinly scattered. In the northern part, however, are beautiful valleys, copious springs, and a rich soil, which supports a dense population; but, owing to the oppressive character of the government, agriculture is neglected. The climate embraces extremes, and the inhabitants exhibit striking varieties of character and manners. The Moslems who border on the Jhylum closely resemble the Hindoos of the Punjab, while those on the east bank of the Indus have all the peculiarities of the Affghan character. The mountain tribes who are found along the west bank of the Jhylum are in a very savage state; most of them live only by plunder; but the tribes of the plains having a fertile country, are in comfortable circumstances, though greatly oppressed by their chiefs. To the northward of this table-land, and eastward from it to the Suttlej, the country rises into hills, which increase in elevation till they terminate with the Himalayas themselves, the whole space, 150 miles where broadest, being occupied by mountains and valleys, the principal of which is the celebrated valley of Cashmere. The dominant people are the Seikhs, who form, however, no more than about a seventh part of the total population, which amounts to three and a half or four millions. Their original country is the *do-ab* (peninsula) between the Ravee and the Suttlej, but few are found 30 miles below Lahore. There are none westward of the Jhylum; and even to the east of Lahore, where they are most numerous, they do not form more than one-third of the people. The rest of the population of the kingdom consists of Brahminical Hindoos, Affghans, Jauts, and various other Moslem tribes. The late Maharajah, Runjeet Singh, formed a large army, 100,000 men of all arms, well dressed and disciplined; the infantry, 26,000, are disciplined in the European manner; the regular cavalry and artillery may be reckoned at 8000; the remainder are irregulars, chiefly cavalry. Nothing satisfactory can be said respecting the amount of his revenues. The principal cities and towns are arranged in the following table, with the distances from Lahore.

Attauree,	70	S.	Jellalpore,	215	S.W.
Attok,	200	N. W by N.	Jelum or Jhylum,	100	N.N.W.
Baraï,	114	N.W.	Jhubber,	42	N.W.
Byedera,	38	S.W.	Jhung,	104	W. by S.
Bhenanah,	23	E. by S.	Jummou,	97	N.N.E.
Bimber,	103	N.N.W.	Kalabagh,	190	N.W. by W.
Bukkup,	195	W.	Kengunpore,	60	S.
Cashmere,	175	N. by E.	Kot-kumalia,	103	S.W. by W.
Chouchouk,	60	S.W.	Kurrumpore,	153	S.W.
Choung,	13	S.W.	Kussoor,	37	S. by E.
Dan-Gali,	140	N.N.W.	Kyrodeen,	23	E.
Deedwal,	140	N.W.	Maina,	240	S.W.
Dera-deen-punah,	208	W.S.W.	Manga,	30	S.W.
Dera-ghazi-khan,	225	W.S.W.	Manikyala,	145	N.N.W.
Dera-ismael-khan,	210	W.	Meerpore,	113	N.N.W.
Dhowler,	80	S.W. by S.	Mittunkote,	290	S.W.
Doborjee,	50	S. by E.	Moultan,	190	S.W. by W.
Eminabad,	35	N. by W.	Mulka,	93	S.W. by S.
Faliah,	80	N.W.	Mulsae,	170	S.W.
Futtehjung,	170	N.W. by N.	Mundee,	160	E.
Futtehpore,	80	S.W.	Muzufferabad,	173	N. by W.
Ghoorka,	53	E.S.E.	Muzuffergurh,	205	S.W. by W.
Gujerat,	73	N. by W.	Nasaurah,	38	N.W.
Gujerunwala,	43	N.N.W.	Neeloo,	122	N.W. by W.
Hafizabad,	55	N.W.	Noon-maimee,	108	N.W.
Husun-abdaul,	180	N.W. by N.	Nungul,	25	N.
Hureeka,	50	S.E.	Nurodeen-seraï,	32	E. by S.
Jellalpore,	100	N.W.	Omerpore,	123	S.W. by S.
Paukpetten,	98	S S.W.			
Peshawer,	235	N.W.			
Pettee,	40	S.E. by E.			
Pin-dadun-khan,	110	N.W.			
Pind-mulik-olea,	175	N.W.			
Pruntz,	144	N.			
Rajaor,	116	N.			
Ramnegurh,	67	N.W. by N.			
Ramtereh,	30	E. by N.			
Rawilpindee,	157	N.N.W.			
Rotas,	110	N.N.W.			
Sadulapore,	75	N.W. by N.			
Seetpore,	260	S.W.			
Sheikhupura,	24	W.			
Shittabgurh,	160	S.W.			
Shujuabad,	210	S.W.			
Sijera,	38	S.S.E.			
Sira,	49	S.W.			
Sooket,	155	E.			
Sungur,	250	W. by S.			
Suntpore,	24	N.W.			
Surai-khojake,	15	N. by W.			
Tebhee,	115	S.S.W.			
Tehur,	80	S. by W.			
Toolumba,	120	S.W. by W.			
Umritsir,	34	E.			
Vizierabad,	66	N. by W.			

Lahore, the capital of the kingdom, stands on the right bank of the Ravee, in N. lat. 31° 33′ and E. long. 74° 22′, about 1000 miles from the mouth of the Indus, 38° from Delhi, 1070 from Bombay, and 1360 from Calcutta. The city is of an oval form, about 3 miles in circumference, surrounded by a strong brick wall and a ditch, with twelve gates, and as many semicircular outworks. Population about 80,000. It contains several splendid mosques; and the Shah-limar, a beautiful garden of the Mogul emperors, is still kept in good order, about five miles from the city. At *Shah-Durrah* or *Shahdera*, 2 miles N., is the mausoleum of the Emperor Jehangeer, a magnificent and strikingly elegant building, of the same style as the Taj-mahal at Agra, and apparently from the hands of the same workmen. *Amritsir* or *Umritsir* (pool of immortality) is a large town, 8 miles in circumference, and surrounded by a mud wall faced with brick. During the existence of the Seikh confederacy, till it was dissolved by the ascendancy of Runjeet Singh, Amritsir was the federal capital, as it still is the principal seat of their religion. It was anciently called *Chak*, afterwards *Ramdaspoora*; and acquired its present name from the famous reservoir or tank built here by the Gûrû Ram-dass. This tank is a basin 135 paces square, built of burnt bricks; in the centre of it stands the *gurunt*, a small square temple, all fretted, and covered with gold outside, and in the inside splendidly and gorgeously decorated, and inlaid with precious stones. In this temple, which is dedicated to the Gûrû

BHOTAN, BOOTAN, BOODHTAN, or B'UTHAN, situate to the east of Nepaul and Sikim, is about 210 miles in length, and 90 in breadth. It is a mountainous country, cold, and rugged. The climate is very various, and rendered at times exceedingly disagreeable by violent gusts which blow up the ravines, and are loaded with dust. The vegetation exhibits considerable peculiarities; the bases and lower portions of the mountains are scantily covered, and it is only at great elevations that the grand forests make their appearance. The lowest edge of them is scarcely ever less than 7000 feet, generally 8000 or 8500, where oaks, magnolias, rhododendrons, and several kinds of fir attain great perfection; but the southern faces of the mountains are bare of trees, in consequence of their exposure to the south-west monsoon. The sovereignty of the country is vested in the Dhurm-rajah, a spiritual prince, who never dies; but the government is exercised by the Deb-rajah, who holds office for three years, and is checked or assisted by a council; but, so bad is the whole system of government, that there is no security for property, and not much for life. Fines, however, are deemed more profitable than bloodshed, and the only safety of the lower orders consists in their extreme poverty. The people seem to belong to the Mongolian stock, their features being purely Tartar; they are rather under-sized, more remarkable for tension of sinew than for weight; they are very quiet and industrious; but the population is scanty, and the villages few and small. The palaces and castles are the only places which are well inhabited, being occupied by idle priests and their followers, who live at the expense of the poor cultivators. The causes of this scantiness of population are polyandry and agyny, bad government, and the filthy and licentious habits of the people. The Booteas seem to have no castes, though they are divided into several sects; but it does not appear that the possession of the higher offices is confined to the higher sects. They may be classed into labourers, priests, idle retainers, and grandees. Perhaps the most numerous, and certainly the most pernicious class is that of the gylongs or priests, whose number is unusually great; they inhabit not only the palaces and castles, but also whole villages. Their chief duty is to be idle, to feast at the expense of the country, to tell their beads, and mutter prayers. Their religion consists in external forms; they are remarkably superstitious, believing in hosts of spirits whose supposed abodes they dare not pass without numerous incantations. The moral character and social habits of the Booteas are very low. They have no genius for war; and though they go armed, even the women, at all times, yet they are afraid to fire the matchlocks which they carry. Their religion is Buddhism. Many of their laws and customs have been copied from the Chinese; and they are equally scrupulous with their celestial neighbours in guarding against the entrance of foreigners into their country. The people are chiefly employed in agriculture; many of them cultivate one farm in the mountains in summer, and another in the lowlands in winter. Their commerce is trifling, as they have few articles to give in return. They export ponies, mules, woollen cloth, rock-salt, and a peculiar spice, very pungent and aromatic, which is the capsule of a species of *xanthoxylon*, found on the mountains to the north-east. Their political relations are very limited. They are tributary indirectly to Lassa, and now directly to China, though the official people strenuously deny it. The summer capital is *Tassiudon*, which, in winter, on account of the cold, is deserted for *Dosen* or *Punukha*. The eastern part of Bhotan is governed by the Towang rajah, and is a portion of the government of Lassa.—(*Journal of a Mission to Bootan* 1837-8, *by Capt. Pemberton; As. Jour.* XXXI. 81., &c. *Journal As. Soc. Bengal, March and April* 1839.)

§ 7. *Foreign Possessions.*

The FRENCH TERRITORY in India consists of several detached portions, forming the single government of *Pondichery*, but arranged in five districts, namely, *Pondichery* and *Karikal* or *Carical*, in the Carnatic; *Yanaon*, in the North Circars; *Chandernagore*, in Bengal; and *Makí*, in Malabar; which comprises an area of about 530 square miles, with a population of about 210,000. *Pondichery*, the capital, which is situate on the coast of Coromandel, 85 miles S. by W. of Madras, is a fine city, laid out very much in the European style, with wide and regular streets, and 40,000 inhabitants. It has a college, and several schools, a mont de pieté, and a botanic garden; in the vicinity indigo, sugar-cane, and mulberries are cultivated. It has no harbour, but a tolerable road. *Mahé* is a small settlement on the Malabar coast, about two miles in circumference on the land side; it contains a well-built town, and carries on some export trade in pepper, arrow-root, and cocoa-nuts. It is very salubrious, and is on that account much frequented by the military from Cananore.

The DANISH TERRITORY consists of the two small establishments of *Tranquebar*, on the Coromandel coast, and *Serampore*, in Bengal, forming together about 93 square miles, with 35,000 inhabitants. *Tranquebar* is a fine town, built almost entirely in the European style, and protected by a citadel named *Dansborg*. It is situate in Tanjore, on the coast of the delta of the Cauvery, a branch of which serves for its harbour. It carries on a considerable trade, and has a population of 12,000 souls. The Danes pay for Tranquebar and its territory an annual rent of 2000 sicca rupees (£200 sterling) to the rajah of Tanjore.

PORTUGUESE INDIA is now reduced to the territory of *Goa*, on the west coast, between the Concan and Canara, *Damaun*, in Gujrat, and the island of *Diu*, on the south coast of Kattiwar. *Goa* consists of two provinces, *Salsette* and *Bardes*, with several islands, measuring altogether along the coast, about 60 miles, with a breadth varying from 15 to 30. The physical characteristics of the country are the same as those of the adjoining British provinces; many parts of it are well cultivated, and its revenues, estimated at 900,000 rupees (£90,000 sterling) defray all the expenses of government, besides furnishing £20,000 to the royal purse of Portugal, that being the proceeds of the tobacco monopoly. The population amounts to 500,000, two-thirds of whom are Christians. GOA, once the splendid capital of the wide-spread Portuguese dominions in Asia, is now deserted, fallen to ruins, and overgrown with jungle. The cathedral, however, and several other churches are still in good preservation; but the whole population, including monks, nuns, priests, and their servants, amounts only to a few hundreds, instead of the 200,000 which the city once contained. The seat of government is now at *Pangi*, called also *Villa Nova de Goa*, 6 miles nearer the sea, a collection of huts built on the low shelving shore of the river. Some of the buildings, however, including the government house, present a handsome appearance from the water. Population about 9000. The river of Goa forms a harbour scarcely if at all inferior to that of Bombay; it is navigable up to Goa, 8 miles from the sea. On the north bank stands the fortress of *Reis*, a striking object, bristling with cannon. The scenery is most beautiful, but the climate of Goa itself is very unhealthy, a circumstance which has chiefly led to the town being so completely deserted. The archbishop of Goa takes the title of Primate of India, and resides at *San Pedro*, 3 miles from Pangi, with which it is connected by a fine road. The entrance to the harbour is formed by *Agoada*, an elevated rocky promontory on the north side, and *Cabo*, a similar but less celebrated point on the south. The only passage for large ships is commanded by the guns of two forts at Agoada. On the point of Cabo is a Dominican monastery, which forms a fine object. *Mergaon*, in Salsette, and *Marpuca*, in Bardes, are considerable towns, with each about 10,000 inhabitants. *Damaun* is a seaport town in Gujrat, on a small river, 82 miles N. of Bombay. The houses are whitened, and give to the town externally a handsome appearance, but the streets are narrow and dirty, and the walls are incapable of defence. Damaun contains several churches and convents, and a Parsee temple, in which the sacred fire brought from Persia has been preserved for 1200 years. Damaun is noted for its docks and shipbuilding. Population about 6000. *Diu* is a small town and fort, now fallen to decay, at the east end of the island of the same name in Kattiwar. The

Governor-General has recently (1840) declared that all kinds of merchandise may be deposited in th ports of Goa, Diu, and Damaun, on the payment of an *ad valorem* duty of one per cent. and that n further tax will be levied on their exportation.

§ 8. *The Islands of India.*

CEYLON.—This large and beautiful island, "the Jewel of the Eastern Seas," and "the Jem o Paradise," is situate between 5° 56' and 9° 56' N. lat. and 79° 51' and 82° E. long. to the south-east o the southern part of the Carnatic, from which it is separated by the Gulf of Manaar and Palk Straits, which, at the narrowest part, along Adam's Bridge, are 62 miles wide. It is of an oval shape the northern portion is an extensive plain, with only a sandy beach, overhung by groves of cocoa-nu trees fringing the coast, and not an eminence of any kind can be distinguished from the sea as breal ing the line of those trees from the interior. The southern portion is hilly near the sea, and mour tainous inland towards the centre, some of the ranges presenting masses of the most fantastic shape All round the island, however, there is a belt of rich alluvial soil well watered by numerous stream On the west side the country is flat; and the north coast is broken into a number of islands an rocks. The centre of the southern portion is occupied by a picturesque table-land, 67 miles by 5 between 2000 and 3000 feet above the level of the sea. From this elevated region some conical moun tains rise several thousand feet higher. The mountains run in general in continuous chains, inter spersed with the loveliest valleys; the hills are clothed to their very tops with gigantic forests, fro which issue magnificent cascades, and foaming cataracts form in the valleys placid rivers, and babblin brooks, which are fringed with turfy banks, and all the beautiful verdure of the inter-tropical re gions. The highest mountain is *Pedrotallagal'la*, near Newera-ellia, 8280 feet high. *Kirrigal-pó* is 7810; *Totta-pelle*, 7750, and *Adam's Peak*, formerly supposed to be the highest in the island, is no ascertained to be only 7420. The *plain* of Wilmantalawe is so high as 6690, and that of Newera-ell 6210.

Though there are no natural lakes in Ceylon, yet probably no country is better watered by river and innumerable streams and rills than the hill country of the interior and the adjacent districts while the ingenuity and labour of the earlier inhabitants, by the construction of immense reservoir had almost rendered it independent of such droughts as occasionally happen. The principal river are: The *Mahaveli-ganga*, or *Mahaweli-ganga* (Great Sandy River), which rises from the Newera ellia Mountains, flows by Kandy, from which to the plains of Bintinne, a distance not exceeding 30 mile it hurries down a descent of more than 1000 feet perpendicular, receiving in its course a great accessio of waters. It then flows north-east with a slow and tedious course, through the flat country, int the sea between Trincomalee and Batticaloa. It is believed to be navigable to Bintinne, but th lower part of its course is obstructed by sandbanks; and below Kandy, by rocks and a succession o rapids. It is subject, like all the other rivers and streams, to great and sudden floods during th rainy season. In 1834 the Mahavila-ganga rose 60 feet above its ordinary level. *Kalany-ganga*, rise from the group of mountains of which Adam's Peak is the centre, and enters the sea three miles north of Colombo, after a course of 60 miles, through three-fourths of which it is navigable for boats. *Kalu ganga*, Black River, rises on the south side of Adam's Peak, and falls into the sea at Caltura: it i navigable for boats 40 or 50 miles. *Wellaway-ganga*, enters the sea between Tangalle and Hamb bangtotte. The other rivers of the island are of little consequence. They are more numerous on the west than on the east coast, and less unfrequent in the south than the north.

Ceylon is completely under the influence of the monsoons; the north-east prevailing from Novembe till February, the south-west from April till September, and the intervening, or equinoctial month having variable winds or calms. The east side of the island is hot and dry; the central, western, an southern provinces are temperate and moist. The south-west wind is felt generally over the island but the north-east wind does not, during half its duration, reach across the mountains to Colombo on the west coast. A great deal of rain falls, particularly among the mountains, and on those parts o the coast which are most directly exposed to the monsoons. The rains are periodical and very heavy In the northern part of the island, and along the east coast, the rainy season begins in November, an lasts about two months with great violence; during the rest of the year the country is dry, and i rarely visited by scanty showers. On the west coast the greatest quantity of rain falls about the set ting in of the south-west monsoon, but it is not so heavy, nor so constant as on the other side; th dry season, however, is more apt to be interrupted by showers. The seasons among the mountain are more or less of the same kind, according to the localities and aspects. Rains are frequent i the interior, and the country is accordingly well watered. The heat varies in different places. Th west coast is remarkable for equality of temperature, the mean being about 78° and the atmospher exceedingly moist. At Colombo the mean daily variation does not exceed 3°, while the annual rang of the thermometer is from 76° to 86°. The east coast about Trincomalee is remarkable for intens heat, the mean temperature of the hot months being about 82°, the greatest daily variation 17°, an the annual range from 74° to 94°. Among the mountains the heat is less violent; the mean annua temperature at Kandy is 73° 5', the mean daily variation 9°, and the annual range from 66° to 86° Higher up, at Newera-ellia, the mean daily variation is 11°, and the annual range from 35½° to 80½ The healthiest parts of the island are the south-west coast, and the hills and table-lands of the interior The most unhealthy regions are the wooded parts between the mountains and the sea, all round ex cept on the south-west, where the hills come down to the coast. Hurricanes are unknown.

Uniformity of formation is the most remarkable feature in the geological structure of the island With very few exceptions, the whole island is composed of primitive rocks, granite or gneiss, wit some large veins of quartz, hornblende, and dolomite. Limestone is found near Kandy and Jaffnapa tam, and is of the shell kind, mixed with coral rock; grey and blackish sandstone occurs along th shores. The only metallic ores hitherto found are iron pretty generally diffused, and manganese The island has been long famed for amethysts, topazes, garnets, cat-eyes, cinnamon-stone, sapphires rock-crystals, shorl, zircon, rubies, and diamonds, &c.; but in general the gems are not of muc value, and the ruby, the most valuable, is rarely met with. The pearl fishery in the Gulf of Manaar sometimes produces great abundance of that valued gem. The most productive pearl banks ar situate off *Condatchy* or *Kondatchie*, a miserable village, 120 miles N. by E. of Colombo; and exten 30 miles from N. to S. with a breadth of 20 in the lower part of the Gulf of Manaar. The fisher generally begins in March, when the calm weather permits the boats to go out and in daily. Th average net revenue produced to government from this fishery for 32 years, ending in 1832 wa £14,622 per annum. The season lasts only 30 or 35 days; and each bank being available only fo a period of about 20 days, once in seven years, the fishery is sometimes small, and sometime there is none at all. The pearl oyster, though neither palatable nor wholesome, is not poisonou and is sometimes eaten by the poorest of the people who frequent the fishery. None of the pea divers are Singalese; the most of them come from the opposite coasts of India. There are som other detached banks, but of inconsiderable value, compared with those of Manaar, situate fa ther south, nearly opposite *Chilaw*. Repeated examinations of the banks, and judicious restric tions of the fishery to those places where the oysters are of full size, have almost brought the pea fishery to be a regular item in the annual revenue of Ceylon.—*Tennent*, I. 255-7. Nitre-caves ar

numerous; alum is plentiful, and the coast from Chilaw to Manaar and Jaffna, on the west side, and from Tangalle, through the Mahagampatoo to the eastward, contains extensive and valuable salt formations.

The vegetable productions are not less valuable, the most celebrated and the most precious of which is the *cinnamon-tree*, which grows wild as well as in a cultivated state, in every southern part of the island where there is sufficient moisture. Hitherto the cultivation and sale of the article have been monopolised by government; but even under this vicious system, the cinnamon gardens covered upwards of 17,000 acres on the coast, the largest being near Colombo. The cinnamon-tree grows wild in the woods to the size of a large apple tree; but, when cultivated, is never allowed to exceed ten or twelve feet in height. Next to the cinnamon in repute, though in reality far more valuable, is the cocoa-nut tree, which furnishes a large portion of the people with their principal subsistence. From Tangalle to Chilaw, a distance of 135 miles, the country is nearly one continued grove of cocoa-nut, bread-fruit, and jack-fruit trees. Cotton is produced with the greatest facility; every village or hut has its patch of sugar-cane and tobacco; coffee grows luxuriantly, and, without care, even of an excellent quality. Of late, the attention of speculators has been strongly directed to this article, which has already become the staple production of the island, instead of cinnamon, the demand for which was so capricious that it could hardly be cultivated with profit; but the coffee planter has a quick and sure return for his expenditure. In five years the tree reaches maturity, and before the expiration of the sixth, the receipts cover the original and current expenditure. During 1838 more than 40,000 acres of land were purchased from government for this purpose; and, if the progress of cultivation continue to advance at the same rate as it has done for the last few years, an immense improvement will soon be effected in the desert wastes of the island, and, as a necessary consequence, in the moral character and intellectual advancement of the people. Almost all the coffee plantations are situate in the Kandian or inland provinces. Many of them are scattered over the high country between Kandy and Newera-ellia, where the road frequently winds through estates in a high degree of cultivation.—(*Lieut. Butts. As. Jour. April* 1841.) The pepper vine grows nearly wild all over the island; cardamum plants are equally plentiful; areca-nut and rice are produced of the best quality; teak forests abound, and excellent masts and yards are everywhere procurable. Calamander, ebony, satin, rose, sappan, iron, jack, and every kind of the most beautiful wood for cabinet work are found in rich profusion. Enchanting groves of the palmyra palms surround the villages in the northern part of the island, and, like the cocoa-nuts of the south, are of the greatest value to the people in seasons of drought. It was at Fort Macdonald and its neighbourhood that potatoes were first successfully cultivated, so as to supply the market at a moderate price; and although at Newera-ellia they grow still larger and finer, it is from Upper Ouva that the general supply is obtained. Not only potatoes, but most of the other European vegetables, are now general in every good garden in the Kandian country; but the seed must be continually renewed from Europe or South Africa.

The animal kingdom is not less rich; earth, air, and water, are instinct with life. The elephants are large and docile; the tiger formidable and destructive; and likewise the buffalo in its wild state. There are deer of every kind, and elks resembling the fossil remains of Ireland. Snakes, even poisonous ones, are very numerous and large, but deaths caused by them are very few. The most dangerous snake is the tic-polanga; the formidable cobra-di-capello is comparatively harmless, being less vicious and less easily provoked. The *puribera* is the monarch of the island snakes, being sometimes more than 20 feet in length; but it is little dreaded, and seems to confine its ravages to the birds. Alligators are found in most of the rivers, and jackals abound in every grove. The mountain districts are infested with a kind of leech which clings pertinaciously to the skin, and extracts much blood, occasioning even painful and dangerous ulcers. In short, there is the greatest abundance of fishes, animals, and fowls; and, taken altogether, Ceylon is one of the most luxuriantly productive, and most highly favoured regions on the face of the globe.

The population may be divided into four distinct classes: *Ceylonese* or *Singalese*, who occupy Kandy, and the south and south-west coasts; *Malabars* or *Hindoos*, who occupy the north and east coasts, with the Island of Jaffna; *Moors* or *Arabs*, who are dispersed all over the island, and form the mass of the population in the Pultam district. *Veddas* or *Beddas*, the aborigines of the island, who were said to be found in the most savage state, in the great forests which extend from the south to the east and north, and also in the most inaccessible parts of the interior, wild-beasts and wild-fruits being their only food, small huts formed on the branches of large trees their resting-places, and a cloth round the loins their only dress. But this account of them is believed to be greatly exaggerated. They are indeed an uncivilized race, thinly scattered over an extensive and unhealthy tract of country, lying between the maritime province of Batticaloa on the eastern coast, and the Kandian hills; but they are all considered to be of the Goyawanzae or highest caste, and do not appear to differ from what other natives would become, if compelled to make the same exertions, and to endure the same privations. The village Veddas have permanent places of residence, cultivate small portions of land, and communicate, although they do not mix with the other natives. The forest Veddas subsist by hunting, or on the spontaneous productions of the earth; and they obtain arrowheads, the only article of manufacture which they covet, through the intervention of their own chiefs, and their brethren of the villages. They are, however, very scantily clothed; their whole dress consisting of a small piece of cotton cloth hanging in front from a string tied round the loins. They may more properly be termed rude than savage, because they are as free from ferocity as from any trace of civilization. Their present state is an inheritance from their ancestors, the Yakkas or aboriginal inhabitants, who were in possession of the eastern part of Ceylon when Vijeya landed, B. C. 543; and, having then escaped from the fury of the invaders, into the forests of Bintinne and Veddarata, they have there preserved the purity of their race, and the superstitions of their fathers.—(*Forbes*, II. 75.) There are also *Malays*, *Moormen*, *Caffres*, and *Javanese*, a few *Chinese* and *Parsee* traders, and many descendants of the Portuguese, Dutch, and English, mixed with native blood, scattered over the island. The pure Singalese of the interior are completely Hindoos in person, manners, customs, religion, and government; and differ from Europeans less in features than in colour, size, and form. The colour of their skins varies from light-brown to black; the colour of their hair and eyes also varies; but hazel eyes are more common than brown hair. In size they generally exceed the lowland Singalese and the Hindoos of Coromandel and Malabar, but are inferior to Europeans; their average stature may be about 5 feet 4 or 5 inches. They are clean made, with neat muscles and small bones; their features are commonly regular and often handsome; their faces intelligent and animated. The women are generally well-made, and good-looking, and often handsome. The Singalese of the coast are generally a finer race of men than the Bengalees, and more elegant than the Rohillas or Rajpoots. The expression of the countenance is fine; their skins nearly black; and their hair long and black, but not coarse. From the genial climate little clothing is requisite, and abundance of food (at the worst, fruit and yams), with fuel at command, probably places the peasant of Ceylon in a better position than the peasant of any other country. The higher classes, with the exception of the old chiefs, have already lost the recollection of barbarous power, and, by giving their children an English education, are teaching them to aspire to those offices which confer real importance and just influence on the possessors. The highest rank of natives have generally mild manners and quick abilities; and, from the laudable ambition with which they are inspired, it may be expected, ere long, that many of them will be found

filling with respectability the high official situations which have been opened to their competition.—(*Forbes*, I. 62.)

The Singalese recognise the four Hindoo castes, which they call *wanes*: the *Echshastria* (*Kshetrya*) or royal caste; the *Bramina*; the *Wiesia*; and the *Sudra*. The first two, however, have now no existence in Ceylon; for the royal family, who were believed to be of the Echshastria caste, are now extinct; and there are no Brahmins. The *Goewanse* or cultivators, form the highest caste in the interior; and were formerly a privileged class, who monopolised, under the Kandian government, all the honours, and all the hereditary rank; while the labourers and tradesmen formed the other caste called *Kushdra-wanse*. In this inferior caste, not only each service or trade was distinct, but was also subdivided into branches, the families of which did not intermarry. Below all these are the *Rhodias*, a race of outcasts, who are employed in the lowest and most degrading professions. The Singalese are, generally speaking, on a level with the Hindoos. In courtesy and polish of manners they are little inferior to the most refined people of the present day; but in intellectual acquirements and proficiency in the arts and sciences, they are not advanced beyond an equality with the darkest period of the middle ages in Europe. Their character on the whole is low, tame, and undecided, with few strong lights or shades; possessing few prominent virtues or vices, it may be considered as a compound of weak moral feelings, of strong natural affections, and moderate passions. In religion they are Buddhists, and, like all uninstructed people, extremely credulous and superstitious; believing in omens, demons, and spirits. By the last census in 1835, the amount of the population was found to be 1,250,000. Ceylon is now entirely in the possession of the British; the government is regulated by a charter granted by the Crown in 1833, and is under the charge of a governor, appointed by the Crown, who is assisted by two councils, the one legislative, the other executive; and for the administration of justice there are a supreme civil and criminal court at Colombo; a vice-admiralty court, and provincial courts in various districts; besides magistracies. Trial by jury was introduced several years ago, with great success, and highly to the satisfaction of the natives, who have proved themselves to be well qualified for the enjoyment of the privilege, and the performance of its duties. For administrative purposes the island is divided into five provinces, named the Eastern, Western, Northern, Southern and Central, and each of these is subdivided into districts. In each province there is a government agent, besides 19 assistants, who are stationed in various districts. These functionaries administer the affairs of government, and also officiate as magistrates. The ecclesiastical establishment of the Church of England consists of an archdeacon, 6 chaplains, and 11 proponents. At Colombo a regular police has been organized on the London system; and throughout the island the police is generally good; but crimes are rare. Good roads, some of which are said to be equal to any in England, have been formed and are forming by Government throughout the island, rendering the various regions easily accessible, and contributing largely to their rapidly advancing prosperity. Various reforms have also been effected in the revenue expenditure, in the system of taxation, and the regulation of commerce; and the moral character of the people has already been raised very perceptibly by making them eligible to every government situation, by the general extension of education, and the introduction and rapid diffusion of the English language; but most of all by the abolition of compulsory service, in making the people all equal in the eye of the law; and abridging the authority and influence of their chiefs.

The mythological history of Ceylon extends backward to the conquest of Lanka, which was effected by the Hindoo demi-god Rama, about 23 centuries B.C.; but the authentic history commences only with the year 543 B.C., when Vijeya, a Hindoo of the solar race, conquered the island, and established a dynasty which continued to exist uninterruptedly till A.D. 1815, when the last of 165 Singalese kings was dethroned by the British Government. The family, however, of Vijeya's descendants had become extinct in 1739; the subsequent kings were only connexions by marriage with the solar race; and from an early period in the sixteenth century their dominion was restricted to the interior of the island by the Portuguese and Dutch, who were finally succeeded by the British in 1796. It has been usually asserted by European travellers and residents in Ceylon, that there were no authentic historical records; but, since the British Government acquired the complete possession and ascendancy in the island, a multitude of records have come to light, from which it is possible to compile a perfectly authentic history of the kings of the solar dynasty; or, from the year 543 B.C. to the present day, a long period of 2383 years. The earlier history is only traditional, or mythic, and, during the long period which elapsed between Rama's conquest and the arrival of Vijeya, is very obscure or almost a blank.—(*Turnour's Epitome of Cingalese History, in Appendix to vol. II. of Forbes's "Eleven years in Ceylon."*) Laka, Lanka Lankawa, Laka-diwa, Lanka-dwipia, or some other variety of these words, is the most ancient appellation of Ceylon to be found in Sanscrit or Singalese records. *Laka* is the ancient Singalese, *Lanka*, the Sanscrit name of the island. The most common name of the island is *Singhala*, variously written *Sihala*, *Seha'en*, *Singhalen*, *Ceylon*, *Seilan*, derived from Singha or Siha, the race to which Vijeya, the Hindoo conqueror and his followers, belonged. Vijeya was banished by his father, who ruled over a country named Lala, whose capital, Singhapura, is probably the same as Singhea, on the banks of the Gunduck, where the site of an ancient city is discernible, covered with numerous ruins and Buddhist monuments.—(*Forbes*, I. 9, 12.) It is asserted by the Singalese, and the Greek and Roman geographers seem to confirm the assertion, that Ceylon was formerly of much greater extent than it now is. Lanka is said to have been 5120 miles in circumference; but by successive encroachments of the sea, to have been reduced to a circumference of 964 miles, which is considered by the Singalese to be the present extent of their island. By Europeans its circumference is reckoned about 800. The first partial submerging of Lanka is stated in the Singalese records to have occurred about 2387 years, B.C.; the second in the time of King Panduwas, who reigned from 504 to 474 B.C.; and the third and greatest in the third century before the Christian era. The Singalese traditions also mention that thousands of isles attached to the kingdom of Lanka were overflowed by the sea B.C. 2387, along with the splendid capital of Sri-Lanka-poora, which stood to the westward of any part of the present island.

The revenues derived from land-rents and various other sources, averages somewhat more than £330,000 a-year, and now generally exceeds the expenditure. The military force consists of 4 regiments of the line, 2 companies of artillery, and the Ceylon rifles, consisting of 16 companies, principally composed of Malays.

Towns, with their distances from Colombo.

Anaradhapoora,	104 N.N E.	Fort Macdowall,	70 N.E. by E.	Newera-ellia,	60 E. by S
Badulla,	85 E.	Hambangtotte,	100 S.E. by E.	Paltupane,	110 E.S.E.
Batticaloa,	140 E. by N.	Jaffnapatam,	170 N by E.	Pantura,	20 S by E.
Bintenne,	90 E.N.E.	Kandy,	60 E.N.E.	Point de Galle,	65 S.S.E.
Calpentyn,	95 N.	Katre-cam,	110 E.S.E.	Pultam,	74 N.
Caltura,	25 S.S.E.	Matura,	82 S.E. by S.	Ratnapora,	41 E.S.E
Chilaw,	37 N. by W.	Moelitivoe,	170 N N.E.	Rokelay,	165 N.N.E
Dondra,	95 S.S E.	Nalande,	75 N E.	Trincomalee,	110 N.E. by N
Fort Macdonald,	75 E. by S.	Negombo,	21 N.	Tangalle,	90 S.E.

Colombo, the capital of the island, is situate on the south-west coast, lat. 6° 57', long 80° 2', with a

strong fort built on a peninsula, which is defended by 300 pieces of cannon. The town is handsome, and divided into four parts by two broad streets. The *Rettah*, or native town, is very extensive, having so many as 50,000 or 60,000 inhabitants. There appears to be little traffic, except in cinnamon and pepper; the harbour is safe at one season only; during the south-west monsoon, the whole coast is wind-bound. *Kandy*, 72 miles travelling distance from Colombo, by a carriage road equal to any in England, is situate at the head of a valley 1678 feet above the level of the sea, and surrounded with hills. The houses are all of clay, those of the chiefs tiled and white-washed, the others thatched; but all arranged in regular straight streets. Kandy was the residence of the latter kings of Ceylon, and is now the occasional residence of the British governor. It contains several temples, and two colleges for Buddhist priests. It is nearly surrounded by the Mahavelligunga, over which there is a splendid wooden bridge at *Paradeinia* or *Paradennia*, 4 miles from Kandy, of one arch 205 feet span, 22 feet wide, and 67 high. Immediately adjoining the bridge, in a bend of a river, is the botanical garden, which is a pretty spot. Kandy is connected by four great roads with Colombo, Trincomalee, Baddula, and Kurunaigala. *Newera-ellia* or *Neweralia*, 50 miles S. from Kandy, upon a table-land 6210 feet above the sea, is a place rising fast into repute, from its salubrity, the lowness of its temperature, and its approximating in many respects to a European climate. Most of the European vegetables grow to great perfection; strawberries are abundant. There is also an hospital for convalescents. The mountain *Pedrotallagalla*, rises above the plain of Newera-ellia, about 2000 feet, and a road has been cut to its top, where a superb view is the reward of those who ascend it. Between Newera-ellia and Kandy, the road is so good that the distance has been ridden in five hours, and the scenery is not to be surpassed in Switzerland or Wales. The valley of *Cotamalie*, in particular, situate at the base of the hills which skirt the plain of Newera-ellia, is considered by many to be the most enchanting spot in the island. The general range of the thermometer at Newera-ellia is from 45° to 65°, but it often falls to the freezing point, when of course, ice is formed; and there are few evenings in which a fire is not found to be necessary for comfort. South-west of Newera-ellia, overlooking Saffragam, is the highest table-land in Ceylon, named by the Ceylonese *Maha-ellia* (the great plain), and part of it *Wilmantawale;* but by Europeans *Horton Plains*, 6690 feet above the level of the sea. *Trincomalee* (*Trinkomalee*), on the north-east coast, in lat. 8° 32′, long. 81° 17′, communicating with Kandy and Colombo by a fine road, is a small and mean town with few European inhabitants, and few Singalese, the lower people being chiefly Roman Catholic Malabars. The fortifications form a sweep of about a mile in length; and might be rendered almost impregnable. The rocky promontory occupied by the fort is dedicated to Siva, in his character of Eiswara, and is held by his votaries in great veneration. Except a few small coasting vessels with rice, there is no trade. The harbour is so land-locked that it appears like a lake; its surface is beautifully diversified with islands, covered with luxuriant vegetation, as are also the hills which surround it. It is capable of containing any fleet of the largest ships in perfect safety, and is the place of refuge for such as are overtaken at sea by the north-east monsoon. Trincomalee is considered the worst station in the island. The vicinity is a wild uncultivated country, abounding with game of all kinds, from the snipe to the elephant. The temperature is much higher than that of any other of the stations. October and the three following months are the cool season, and the climate is then truly pleasant; in March, April, and May, the heat is oppressive; the thermometer is seldom below 94° during the day, and is often at 99°; the nights are usually cool. There are often long intervals of dry weather: six months sometimes pass without rain. The coast is celebrated for beautiful shells. The hot wells of *Kanya*, situate near a range of wooded hills, eight miles from Trincomalee, are seven in number, of small size, and of different degrees of temperature, varying from 100° to 110°, and consist of warm, pure, clear water. About 30 miles from Trincomalee is the celebrated lake of *Candelay*, formed by an embankment across a valley, and covering an area of about 15 square miles. *Point de Galle*, a strong fortress and excellent harbour, on the south coast, lat. 6° 1′, long., 80° 10′. The outer and inner harbours are spacious, and the inner is secure at all seasons. The town is situate on a rocky promontory, with works upwards of a mile in circumference; and is remarkable for its salubrity. The usual range of the thermometer is from 80° to 84°, but the heat is tempered by the sea-breeze, which blows nearly the whole year. The south-west monsoon blows full and fresh from the ocean, renovating the constitutions of those who have suffered in the more unhealthy parts of the island. The inhabitants are celebrated for their skill in the making of dressing-cases, work-boxes, and jewellery. *Dondra* or *Dewinuwara* (God-town), a village at the most southerly point of Ceylon, lat. 5° 50′ N., long. 80° 40′ E. *Jaffna* or *Jaffnapatam* stands in a flat country, but the richness of the vegetation, and the beauty of the scenery render its appearance exceedingly picturesque. The houses are neat and clean, and are all white on the outside; the principal street, which runs through the centre of the town, is finely shaded on each side by rows of large trees, towering above the houses, which, indeed, are only one storey high, but raised a few steps from the ground on a paved terrace. At the distance of a quarter of a mile westward from the town, stands a commodious pentagonal fort, having five bastions, and surrounded with broad ditches and an extensive glacis; a large square occupies its centre, enclosed by rails, and bounded by streets of excellent houses. At two miles distance from the fort are the Pans, where a great quantity of salt is gathered, which is disposed of for twopence the paralt (40 pounds weight), to Government, who afterwards sell the same quantity to the traders for two shillings. Vast quantities are exported to Madras, Calcutta, and other parts of India. Jaffna is situate on an island at the northern extremity of Ceylon. Near *Mantotte*, opposite the island of *Manaar*, are the ruins of a very large city, built of brick and mortar, and an immense tank 16 or 18 miles in extent, said to have been founded by the Hindoos, and made the capital of a kingdom which they established in the northern part of the island. *Anaradhapoora*, one of the ancient capitals of Ceylon, an honour which it held for twelve centuries, was surrounded by a wall 16 miles square. Among its ruins are six pagodas of immense size, the form being a hemisphere surmounted with a spire; the two largest are each 270 feet high, of solid brick work, once entirely covered with chunam; the roofs are composed of curiously carved rafters of wood. All the ruins, and even the lofty monuments are either covered with jungle, or obscured by forests; it is nearly a thousand years since it ceased to be the capital. Its successor *Polennaraia*, which was the capital for 550 years, is likewise completely in ruins; it is situate about 36 miles S.W. of Kandy, and was finally deserted in A.D. 1319. It is now generally called by Europeans *Topare*, a corruption of *Topaweva*, the name of the tank which extends along one side of the city.

The most celebrated place, however, in Ceylon, is *Adam's Peak*, so called by the Mahometans, who believe that Adam, whose stature was equal to the height of a tall palm tree, after having been thrown down from Paradise in the seventh heaven, alighted on this peak, and remained standing on one foot until years of penitence and suffering had expiated his offence, and formed the footstep. The Hindoos ascribe the impression to their god Siva. By the Singalese it is called *Siri-pada* or *Sreepada;* also *Samanella* or *Hamanella*, from Saman, the guardian god. The top of the mountain is 7420 feet above the sea; its area measures only 70 feet by 30, and is surrounded by a stone wall 5 feet high, built in some places on the brink of the precipice. Within the inclosure is a granite rock, the highest part of which is 9 feet above the ground, and on the top is the Sree-pada, the impression of Buddha's foot, which he made on his first visit to the island. It is a superficial hollow, 5 feet 3½ inches long, and 2 feet 5 or 7 inches wide. The cavity certainly bears a coarse resemblance to the figure of a human foot; but that is helped out by a margin of plaster, which is coloured like the rock. It is covered by a small wooden temple, fixed by chains, and usually attended by a priest; and is

THE LACCADIVES are a cluster of 17 islands, due west of Malabar, between 10° and 12° N. lat., and 72° and 74° E. long., of which only eight are inhabited. The total population, about 6500, are a poor inoffensive race, all Mahometans of the Moplay sect, and subjects of the Bibi or princess of Cananore. There is no safe anchorage among the islands, and they produce nothing of any commercial value but the cocoa-nut. In the south-west monsoon all intercourse among them is interrupted, and their large boats are sent to the Malabar coast for shelter. The islands are all defended by coral reefs to the windward, except *Anderote*, the principal, which not only presents a bold front to windward, but that front is one side of the island itself, and not a reef, as is generally the case. The coral reef on which it is based projects to leeward, instead of windward, south-west being considered the prevalent direction of the wind.

Elscalpine Bank, 11° 16′ N. and 74° 20′ E., has only six or seven fathoms water, with a rocky bottom in some places, on which a large ship would be liable to strike in a heavy sea, 27 leagues from Mount Dilly.

THE SOUTH-EASTERN PENINSULA.

THIS is an extensive region, which lies to the south-east of India, and south-west of China, is possessed by several distinct nations, and divided into various independent states, but bears no general distinctive name. Some geographers have proposed to call it *India beyond the Ganges*, or the *Farther Peninsula*; others, *Indo-China*; and Malte Brun calls it *Chin-India*. But these names are all liable to various objections; we shall therefore adopt another, which involves no theory or geographical impropriety, but simply expresses the situation of the country relatively to the rest of the continent of Asia, namely, *The South-Eastern Peninsula*. It forms one geographical region; and, as such, we shall first describe its general natural features, and then proceed to the particular description of the countries which it comprehends.

This region forms a large peninsula, projecting from the borders of India and China southwards into the Indian Ocean, and terminating in a long narrow promontory, which approaches within two degrees of the equator, and forms the southern extremity of the continent of Asia. The surface is occupied by several long ranges of mountains, which extend from north to south, forming between them wide valleys and maritime lowlands, which are drained and watered by large rivers, the remote sources of which are found in the northern mountainous region between India and China.

The principal rivers in the peninsula are the following:—The IRAWADY, which has its sources among the mountains to the eastward of Assam. The latest accounts trace them to numerous p tty streams, from the mountains of the Laos and Yunnan, which are said to be covered with perpetual snow. In the summer of 1827 the Irawady was crossed in 27° 30′ N. lat. by Lieutenants Wilcox and Burlton, from Sudiya, at a place where it was only 80 yards wide, and which, according to the natives, was only 50 miles from its sources. Klaproth, however, on the faith of Chinese authorities, connects the Irawady with the Sanpoo of Thibet, by means of a river which the Chinese call *Yin-liang*, and which seems to be the same that is called by the Birmans *Tapan-khyoung*; but Captain Hannay, who travelled from Ava to the borders of Assam in November and December 1835, describes the Taping or Japan, near old Bhamo, as not more than 150 yards broad, with only sufficient water to float a small boat; which seems to set at rest the question of its identity with the Sanpoo. So paltry a stream as this would form an insignificant channel for the mighty drainage of a thousand miles of the Himalayas and Kwan-lun.—(*Crawford's Embassy to Ava*, II. 228; *Asiatic Journal*, November 1837.)—The Irawady flows southward through the Birman empire; and, in Pegu, divides into a number of branches, which water a large extent of country, and give important facilities to navigation. It enters the Indian Ocean by more than 14 mouths, in 16° N. lat., to the eastward of Cape Negrais, its delta forming a swampy coast of 170 miles from E. to W. It may be ascended to Ava at all seasons by vessels of 200 tons, and by native boats to Bhamo, near the frontiers of China; the length of its course is reckoned to be 1200 miles. It is in fact the great highway of the Birman empire, and the principal source of its fertility. Its principal affluent is the *Kyen-duen*, which joins it at Yandabo, about 50 miles below Ava.

The SALUEN, THALUEN, THAN-LOUEN, THALOUYEN, or THALEAIN, appears to rise in Thibet, where it is known by the name of *Oir-chou*, and flows through Yunnan under the name of *Nou* or *Lu*. After leaving China it takes the name of *Saluen*, and separates part of the Birman provinces from those of Siam. It enters the Gulf of Martaban to the eastward of the delta of the Irawady, by two branches, which are divided by the island of Balu. The northern branch is so much obstructed by shoals as to be impracticable for shipping; but the southern branch has a width of seven miles, and the tide flows up the main stream and its affluents more than 100.

The MEINAM appears to have its sources in Yunnan, from which it runs due south to the Gulf of Siam. In Siam it divides into several branches, which form a number of fertile islands. The lower part of the main stream is very winding; it has generally a depth of four or five fathoms, and is free from shoals, up to Bankok. The mouth of the river is 5 miles wide, but the navigable channel does not extend more than half a mile, with a low swampy shore. Large vessels anchor out at sea, 8 miles off shore; the tide rises and falls seven feet, but is irregular, ebbing and flowing only once in the twenty-four hours. In the country of the Laos is a river called *Annam-muit*, which connects the Meinam with the river of Cambodia; but it seems to be a small stream, navigable only during the season of inundation. The Meinam is navigable for boats up to Chaugmai.

The MAY-KUANG, MENAM-KONG, or MEKON, rises in Thibet, where it bears the name of *Dza-chou* or *Sa-chou*; it afterwards flows through Laos and Cambodia into the Chinese Sea, by a number of channels, which form an extensive delta. In Yunnan it is called *Lan-thsang*.

The *Saung* or *Don-nai*, in Lower Cambodia, has a course of 300 or 40 · miles, passing the town of Saigon, and forming one of the finest navigable rivers in the world. The *Song koi* is the largest river of Tonquin; the *Che-sui* is another river of the same country; both of which fall into the Gulf of Tonquin.

CAPES.—*Negrais*, at the western mouth of the Irawady; *Romania*, the south-east point of the Malay Peninsula, forming the southern extremity of the continent of Asia; *South Cape*, *North Cape*, *Rocky Point*, and Cape *Patani*, on the east side of the peninsula; *Kuri Point*, on the west side, and Cape *Liant*, on the east side of the upper part of the Gulf of Siam; *Point Kamboja* or *Chrudin*, the south-east point of the gulf; Cape *St. James*, at the eastern side of the river of Saigon; Cape *Padaran*, Cape *Avarella*, Cape *Bantangan*, Cape *Tarom* or North Cape, on the coast of Cochin-China.

ISLANDS.—*Balu*, at the mouth of the Saluen; *Tavoy*, *Great Canister*, *Calasa*, *Tenasserim*, *Kings*, *Tower*, *Domel*, *Clara*, *Tumis*, *Susannah*, *St. Andrew*, *St. Matthew*, *Aladdin*, *Chance*, *Middle*, *Pesbroke*, *Sewer*, *Junk-ceylon* or *Salang*, *Rejia*, *Brothers*, *Pongang*, *Battoo*, *Pilgrims*, *Malacca*, *Sancgald*, *Tebton*, *Bouton*, *Trotto*, *Lancawe*, *Laudda*, *Rat*, *Penang*, *Dinding*, *Sambelang*, *Jarak*, *Callain*, *Arroan*, *Ladoes*, *Pisang*, *Cocob*, all along the west coast of Tavoy, Tenasserim, and the Malay peninsula; *Tingai*, *Aor*, *Pinang*, *Timaon*, *Pabi*, *Varela*, *Brabi*, *Capets*, *Great Redang*, *Lantingan*, *Trantaun*, *Kon*, *Lozon*, *Tantalum*, *Cara* or *Krak*, *Carcam* or *Sarcan*, *Saseeri* or *Thangsan*, *Barida*, along the east coast of the peninsula; *Seachang*, *Nak*, *Kram*, *Phai*, *Rin*, *Sin*, *Sam-sa-sam*, *Kah*, *Samet*, *Kud*, *Chang*, *Koog*, *Dud* or *Klrak*, *Harding's Archipelago*, *Parjang*, *Onbi* or *Oby*, on the east side of the Gulf of Siam; *Condore*, *Caturick*, *Sajata*, *Cicir de Mer*, *Cicir de Terre*, *Tre*, *Buffalo*, *Turtle*, *Cantan* or *Callao Ray*, *Chamcalhao*, *Tiger's Isle*, on the coasts of Cambodia and Cochin-China, besides a great many others. Many of these islands have the word *Pulo* or *Kho* prefixed to their names, both of which mean *island*; the former in the Malay, the latter in the Siamese language. The only islands which deserve particular notice are, *Tantalum*, *Junk-ceylon*, and *Penang*. *Tantalum* lies at the south-west side of the Gulf of Siam, is about 70 miles in length, and is separated from the mainland by a narrow channel, which, at the northern end, is bare at low water. The southern part of the island

is high, but the north is low and marshy. No part of it is cultivated or inhabited except that which contains a portion of the town of *Sungcora*. *Junk-ceylon* lies on the west coast of the peninsula, in the same latitude as Tantalem, 9° N. The name is a corruption of the Malay words *Ujung Salang*, headland of Ceylon. It is the most densely inhabited portion of this part of the Siamese territory, and is under a governor styled Phya, who has subject to his jurisdiction seven districts on the adjoining mainland. The island is of granite formation, and possesses very rich lead mines. It is nearly 40 miles long, by 12 or 15 in breadth, and is separated from the continent by a very narrow shallow channel. *Penang* will be noticed elsewhere. *Preparis*, 70 miles S. of Cape Negrais, is a small island 3 miles long, 8 in circumference, covered with wood and jungle, and surrounded for several miles by sunken reefs, which render it the dread of navigators. It is accessible only on the eastern side.

PEOPLE.—With the exception of the Malays, who possess the coasts of the peninsula which bears their name, and the negro tribes who inhabit the interior of the same narrow tract, the whole of this extensive region is inhabited by many tribes and nations of the same physical type, forming a sort of intermediate variety between the Mongolian and the Malay or Caucasian races, but more nearly resembling the first. They are, in general, shorter than the Chinese and Hindoos, but taller than the Malays; their average height is five feet three inches. Their lower limbs are well formed; their persons are robust, active, fleshy, and well proportioned, wanting, however, the grace and flexibility of their neighbours in the west; their complexion is a light brown, perhaps a shade lighter than that of the Malays, but much darker than that of the Chinese. The Siamese and the Kariens are the fairest, being of a bright cane colour; the Birmese and Peguans are of dark bamboo. The face is flat, with high cheek bones, presenting the form of a lozenge; the hair of the head is abundant, black, lank, and coarse; but the beard is scanty. Their languages exhibit the same characteristics of simplicity, poverty, and deficiency with the monsyllabic languages of China and Thibet. Three distinct languages prevail among them:—the Birmese, which is spoken in Ava and Aracan; the Siamese, in Siam and Lao; and the An-namese in Tonquin and Cochin-China. Pegu, however, is said to have an original dialect called the Mon, of which too little is known to determine its relation to the others. The sacred language of Birmah is the Pali; the Birmans have also borrowed the Sanscrit alphabet; their legal code is one of the commentaries upon the institutes of Menu; and in these and some other respects they discover their affinity to the Hindoos; while the Siamese, An-namese and Peguans bear a more strongly marked resemblance to the Chinese.

GOVERNMENT.—This region exhibits despotism in its greatest purity. As in China, the names of the Emperor of Birmah and of the King of Siam must not be pronounced during their lives by any of their subjects, under pain of death; and these dread names are confided only to a small number of favourite courtiers. In Birmah, Siam, and An-nam, every man above twenty years of age, with the exception of the priests and public functionaries, is obliged to devote not less than every third year of his life to the public service, either as a soldier or as a labourer. It is on this account that, among these people, emigration is considered as a treasonable offence, and equivalent to a theft of the prince's property. There exists, however, throughout these countries, in spite of the faults of their governments, a great degree of order and regularity. Civil and criminal justice are administered with more firmness and with less precipitation than in several other countries of Asia; the result of which is considerable security for life and property. The administrative forms among the Birmans and the Siamese are of interminable slowness; but in Cochin-China the activity of the government is equally vigorous and rapid. The Emperor of An-nam has called himself for a long time the vassal of China; and the King of Siam still recognises his vassalage to that empire; but this dependence is only nominal. The tribute which they pay is merely a formal acknowledgment, and every interference of China in the affairs of government is rejected with firmness. The savage tribes live under their respective chiefs, who are more or less oppressive; but some of them enjoy a considerable degree of liberty.

INDUSTRY.—The civilized portion of the inhabitants of this region have made little progress in the useful or the fine arts. They excel, nevertheless, in gilding, in a kind of varnished work, ornamented with rich mosaic in mother-of-pearl; in idols, from the smallest size to the most colossal, in certain kinds of gold and silver work, in common pottery, and the building of ships and boats. The Cochin-Chinese have made great progress in naval architecture and navigation, as well as in everything pertaining to the military art; a progress which they owe to the Bishop of Adran, and several French engineers. In 1787, the King of Cochin-China having been re-established on his throne by the efforts of the Bishop of Adran and the French missionaries, invited several officers and engineers of that nation, who formed very important establishments, and superintended the various improvements which were made in the naval and military arts. In other respects, the people of these countries are inferior; they cannot make cotton-cloth like the Hindoos, porcelain like the Japanese, or silk like the Chinese. The care which the Cochin-Chinese and Tonquinese take of these latter works gives them a great advantage in the useful arts over the more western nations. They make coarse cotton-cloth for their own use; also slight silk stuffs, which formerly, in the infancy of European manufactures, were eagerly sought for in our markets. The large towns are the principal seats of industry. In Birmah, agriculture is chiefly the lot of the Karyan, the Khyan, and other tribes who do not congregate in towns, and some of whom have not even ceased to be nomadic.

COMMERCE.—For several years past the commercial relations of the Europeans with the civilized people of the South-eastern Peninsula have become much closer than formerly. For upwards of forty years the Chinese have possessed themselves of all the commerce of Siam, of which they are the foreign merchants, the navigators, and the seamen; 140 junks, of 35,000 tons burden, sail yearly to China; and 40 or 50 to Sincapore, which is also frequented by junks from Cochin-China. Besides the commerce carried on in Birmah by European ships, the Birman boats trade to a considerable extent, creeping in fine weather along the coast of Aracan to Calcutta. Commercial business of some importance is also carried on by land between the British and the Birman territories, between Birmah and China, and between China and Tonquin. But with Siam the Birmans have no commercial relations; an implacable hatred, and a state of continual warfare exist between the two states. Their respective frontiers have the appearance of a desert, and slavery awaits the unfortunate adventurer who passes his own frontier, and has the misfortune to fall into the snares which these people respectively lay for each other.

The principal articles of export are cotton, silk, tin, teakwood, eaglewood, and sandalwood, gumlac, catechu, grain, salt, oil, sugar, ivory, pepper, birds' nests, precious stones, particularly rubies and agates, iron, and varnished works. The principal imports are cotton stuffs, wrought silks, cloth, opium, velvet, porcelain, tea, paper, lint, canvas, and a great number of European and Chinese manufactures. The principal inland trading places are, Ava, Prome, and Bhamo, in Birmah; and Ketsho in Anam. The principal maritime trading places are Sincapore, Georgetown, Rangoon, Bankok, Chantibou, Saigon, Huehan or Faifo, and Touron or Hansan.

DIVISIONS.—The whole region may be divided into six portions: 1. The *Birman Empire* or *Birmah*; 2. The *Kingdom of Siam*; 3. The *Empire of An-nam*; 4. The *Country of the Laos*; 5 The *British Provinces of Martaban, Tavoy, Tenasserim, Mergui, Malacca, Wellesley, Penang*, and *Sincapore*; 6. The *Malay States* of *Queda, Perak, Salangore, Johore, Pahang, Kemamang, Tringano, Calantan*, and *Patani*.

§ 1. *The Birman Empire*

Is situate between 15° 45′ and 27° 20′ N. lat., and 93° and 99° E. long.; being about 800 miles in length from north to south, 300 in breadth from east to west, and comprising an area of 200,000 square miles. It is bounded on the north by Assam, and the unexplored mountainous country farther east; on the south by the Gulf of Martaban; on the west by the hill countries of Cachar, Tipperah, Chittagong, and Aracan; and on the east by the Chinese province of Yunnan and the river Saluen, which divides it from Siam. From the sea up to the parallel of 17½°, the country is low and champaign; from that point to 22° it is elevated and hilly; and further north, it is decidedly mountainous. It is watered by four of the great rivers already mentioned, the Saluen, Setang, Irawady, and Kyen-duen, all of which have a southerly course, marking the character of the country as a plain, inclined from north to south. It contains a great many lakes; those in the lower provinces are numerous, but small; the province of Bassein alone contains about 127. The lakes of the upper country are much larger. Birmah has about 240 miles of sea coast, extending from Cape Negrais to the mouth of the Saluen; the whole of which is low, marshy, and broken by at least twenty channels of rivers, or arms of the sea. In a mineralogical view, the Birmese territory may be described as consisting of four divisions: 1. The alluvial plain formed by the mouths of the great rivers; 2. The country of secondary or tertiary formation, extending from between the 18° and 19° to near the 22° N. lat.; 3. The extensive mountainous tract of primary formation, lying to the north, the north-east, and the east of Ava, and the hilly regions which form the western boundary of the vallies of the Irawady and the Kyen-duen. The first region is remarkably destitute of mineral products; but the other two contain limestone and marble, gems, principally of the sapphire and ruby family, beautiful serpentine, iron, gold, silver, copper, tin, lead, antimony, amber, coal, petroleum, nitre, natron, and salt. The most remarkable, however, of these is the petroleum or mineral oil, which is procured from wells sunk in a bed of blue clay, about three miles from the town of Re-nan-k'hyaung (smelling-water rivulet), on the east bank of the Irawady, in lat. 20° 27 N. The wells occupy a space of about sixteen miles square; the oil, when first obtained from the well, is thin, but thickens by keeping, and in cold weather coagulates. Its colour is a dirty green, like that of stagnant water; it has a pungent aromatic smell, which is disagreeable to most people, and, in burning, it emits an immense quantity of black smoke, which soils everything within its reach. It is, however, so much cheaper than any other kind of oil, that it is universally used by the Birmans for their lamps, wherever there is water to convey it. The annual produce of the wells is estimated at twenty-two millions of viss, each 3 65-100 pounds avoirdupois. Among the useful productions, the teak-tree holds a distinguished place; the forests are very extensive, and it appears to be very generally diffused throughout the high lands of the kingdom; there are also oaks and other valuable trees, mimosa, catechu, and others of the same family. The forests also furnish varnishes and stick-lac. Birman agriculture embraces rice, maize, millet, wheat, various pulses, palms, sugar-cane, tobacco, cotton, and indigo. Rice is the great object of husbandry throughout the kingdom. The useful quadrupeds domesticated by the Birmans are the ox, the buffaloe, the horse, and the elephant; the last of which, however, appears to be merely an object of royal luxury and ostentation. The hog is also domesticated, but being neglected, its habits are disgusting and offensive in the highest degree. The dog is seen, but uncared for. Cats are numerous, and dexterous in destroying vermin. The ass, the sheep, and the goat, though bearing native names, are little known in the domestic economy. Of poultry, only a few common fowls and ducks are reared. Wild animals and game are numerous. The most remarkable quadrupeds are the elephant, rhinoceros, hog, deer, ox, buffalo, bear, otter, tiger, leopard, wild and civet cats. The elephant is found in all the deep forests of the country, and is peculiarly abundant in Pegu. Hares, wild cocks, pheasants, partridges, quails, and snipes are also abundant; geese and ducks are numerous in the upper provinces. The Birman territory is but very partially cultivated, and thinly peopled by a race of inhabitants who have made little progress in useful industry. The financial system of the government is rude, barbarous, and inefficient beyond what can easily be believed. No regular land revenue is collected on account of the sovereign, the greater part of the lands being given away in jageer to members of the royal family, to public officers, and to favourites, instead of pensions or salaries, and a mere trifle is reserved for the king. Scarcely any disbursements in the form of money are ever made from the treasury, as no salary is paid to any public officers from the highest to the lowest; those who have no lands live as they can, on fees, perquisites, and extortions. Even the government itself does not encroach upon its hoard, except on very extraordinary occasions, and may be said to depend on the daily supplies. If an embassy is to be sent to a foreign country, a contribution is levied for the purpose; if an army is sent on an expedition, the necessary expenses are raised on the occasion; if a temple is to be built, the same thing is done; and so in all other cases.—(*Crawford*, II. *Appendix*, 23.) Few countries have had their population so variously estimated. Old geographers stated it at 30,000,000; Symes made it 17,000,000; Cox afterwards reduced it to 8,000,000: and Balbi allows only 3,700,000. "The chief woongee at Ava informed me that the last census gave a total of 300,000 houses. After the most careful inquiries, I am led to put down the number of the inhabitants to whom the Birman is vernacular at 3,000,000. The Shyans are probably three millions more, and, with other subsidiary tribes, bring up the total population to about the estimate of Cox."—(*Malcolm's Travels*, I. 208.)

Birmah is inhabited by many distinct nations or tribes, of whom so many as eighteen have been enumerated. The most considerable of these are the proper Birmans, the Peguans or Talains, the Shans or people of Lao, the Cassay or Kathe, the Zabaing, the Karian or Karens, the Khyans, the Ys, and the Lawa, which are respectively numerous and civilized, nearly in the order in which they are here mentioned. Though differing in language, and often in manners, customs, and religion, they have the same physical type which is common to all the tribes that possess the countries between India and China. Widely different from the Chinese and the Hindoos, they approach more nearly to the Malays, from whom, nevertheless, they differ so considerably, that even a stranger may distinguish them without difficulty. The Birmans may be described as of a short, stout, and active, but well proportioned form; their complexion is never of an intense black, but is commonly brown, or resembling dark bamboo. The hair of the head is black, coarse, lank, and abundant. There is a little more beard, and generally more hair on other parts of the body than among the tribes of the same race to the south, as the Siamese and the people of Lao. The proper Birmans inhabit a dry and elevated country; but climate and other physical circumstances appear not to produce any material difference between them and the other tribes of the empire. The Peguans or Talains, who inhabit the alluvial plains, are, however, alleged to be a more robust and active race than the Birmans. The Birmans are greatly inferior to the Hindoos in civilization, and still more so to the Chinese. They are considered by Mr. Crawford to be nearly on an equality with the Siamese; or, more nearly still, with the people of Java; they are, however, more advanced than the other civilized inhabitants of the eastern archipelago. Their laws and political institutions, bad as they are, are commonly better than those of the Indian islanders; yet the latter are superior to the Birmans in enterprise, courage, personal independence, and even morality. In one respect they agree: namely, in the comparative absence of religious or political bigotry, and the freedom from unsocial customs. The practice of tatooing, or staining the skin of an indelible tint, obtains among the Birmans and Talains, and has been followed more or less by the nations whom they have subdued.

the Kyens, the Aracanese, and the Shans. Another practice, which seems to be universal with both sexes, and with all the races which inhabit the Birman territories, is that of boring the lobe of the ear, so as to make a very large and unseemly hole, into which is stuffed a gold or silver ornament, or a piece of wood, or a roll of paper. The Birmans are extensive consumers of the betel mixture, and the smoking of tobacco is universal. With respect to dress, the Birmans are well, and not unbecomingly clad; but much of the body is left naked; and the texture and pattern of the fabrics worn, though substantial and durable, are coarse and homely. The dress of the priests differs entirely from that of the laity. The head is not only without covering, but is, or ought to be, closely shaved, and its only protection against the sun is a small fan of palmyra leaf. The colour of the priestly costume is yellow, which it would be deemed nothing less than sacrilege for any one else to use: so peculiarly sacred, indeed, is this colour held, that it is not uncommon to see one of the people pay his devotions in due form to the old garment of a priest hung out to dry, or to one after being washed. A superficial education is very common, and there is probably not more than one man in ten who is unable to read. This is chiefly owing to the institution of monasteries, and to its being a religious duty of the priests to instruct youth; but their science is of the lowest description; and they have an intense passion for alchymy, the object of which is to change the baser into the more precious metals.

The uniformity of the physical structure of the Birmans extends in an equal degree to the development of their moral character. The face of the Birman is without intelligence; his mouth is large and sensual, the teeth prominent, and the nose flat. Altogether the national cast of countenance is vulgar in the extreme, and so rigid that the passions have scarcely the power of relaxing it. Early taught by experience to study precaution, and practise dissimulation, candour and sincerity are unknown to them, and it is a national boast that the Birmans are without equals in their adroitness in concealing the truth. Happy or sad, their physiognomy announces neither pleasure nor pain; and even when questioned on the simplest topic they return an indirect reply. Artifice and circumvention are resorted to as the legitimate means of attaining their ends, and the man who should employ neither deceit nor stratagem in the pursuit of his object would be looked upon as little removed from a fool. They are, however, a very lively and talkative people; very vain, and proud of their affected superiority over every other nation; obstinate, suspicious, and addicted to many vicious habits, particularly the smoking of opium and gambling. The diversity of talent, the variety of appearance, and disparity of form, so conspicuous in individuals of the civilized countries of Europe, are scarcely to be found in Birmah. Every person conforms to the habits of the mass; and in respect of fortune the whole community are more upon a level with each other than any people who dwell in cities. Each has the same opinion of himself, of his country, and of foreigners in general. The national characteristics are perhaps less strongly marked in the priests, owing to their life of study and devotion; but these are not perpetuated, in consequence of their celibacy. Except in remote villages the people are on a perfect equality in respect of education, a circumstance which is accounted for by the fact that they are all instructed in the same routine, which embraces reading and writing in the vernacular tongue, and a smattering of Pali, collected from elementary books. As the colleges have no direct revenues, the priests are dependent for subsistence and clothing on the freewill offerings of the people; but usage has imposed on parents the duty of feeding the clergy of the college in which their children are educated. A large number of scholars forms, therefore, the best endowment of the brotherhood, a fact which may account for the vehemence with which they exhort their hearers to send their children to school, and denounce the negligent in this respect as the enemies of religion.

With respect to the Birmans it is obvious, says a late writer, to the most casual observer, that the country is gradually falling to decay. While the people of India are pressing forward with rapid strides, in defiance of the trammels of caste, scarcely glancing behind them, and then only to smile at the errors of their ancestors, the Birmese are receding from twilight into darkness, gathering their wisdom from books fourteen hundred years old, turning the fables of their forefathers into truths, pausing in puerile admiration over the knowledge and exploits of their ancestors, and lamenting their own fallen condition; the government, meanwhile, regardless of the value of life, draining an already half-peopled country of its inhabitants, towns dwindling into villages, and villages disappearing altogether; communication becoming less frequent; the people dispirited by oppression, yet passionately attached to the soil, anxiously awaiting the fulfilment of the prediction which promises them the restoration of their lost happiness and power, under a wise and just dynasty. The wars which had prevailed since the twelfth century, at one time between the Shans and the Birmans, at another between the Siamese and the Peguans, and at a later period between the Peguans and the Birmans, had almost stript those regions of their inhabitants, when the warlike propensities of Alongpora and his successors give the final blow to the prosperity of Birmah. They robbed their cities of every able-bodied man, and carried their arms into Siam, Aracan, Assam, and Cassay, exterminating the people wherever they came, till the whole region from the 95° to the 100° of longitude, and from Cape Negrais to the tropic, became almost untenanted by human beings. It is now overrun with jungle covering the ruins of forts and temples, which serve to mark the spots that were crowded in former times with a dense population, whose descendants are now gathered in scanty groups along the banks of their magnificent rivers. But they have lost the enterprise and valour which rendered them the terror of their neighbours, and retain only the vanity, obstinacy, and restlessness by which they have been always characterised. The degenerate Birmans seldom engage in any pursuit which requires much mental application; their books on religion and science are translations from the Pali; their poetry is confined to odes and songs of love and war; their knowledge of music is very limited; they are unacquainted with chemistry, and believe in the transmutation of metals. On the other hand, they are acquainted with vegetable physiology, and the sexes of plants; they can work in gold with considerable taste; they can weave intricate patterns, which even in England it has been found difficult to imitate, and they can carve in wood with tolerable ingenuity; but, on the whole, they do not excel, or even attain mediocrity, in any art which demands elaborate manipulation; and the few manufactures which they still possess, flourished among them in higher perfection at the moment of our first acquaintance with them than they do at present.—(*Jos. Smith, Asiatic Journal, April* 1841.)

Among the Birmans and the Talsins there may be said to exist seven classes of society distinguished by their privileges or employments; namely, the royal family, the public officers, the priesthood, the merchants, or "rich men," as they were called, the cultivators and labourers, slaves, and outcasts. The only class of public officers which can be called hereditary are the Thaubwas or Saubwas, the tributary princes of subjugated countries. The rest of the chief officers are appointed and dismissed at pleasure; and their titles, rank, and offices, and very often even their property, do not descend to their children. Any subject, who is not a slave or outcast, may aspire to the first office in the state, and the highest offices are really often held by persons of very mean origin. The priests called Phungyi or Ra-han, are bound to a rigid celibacy, interdicted from all employment but their own especial calling, and particularly from intermeddling with politics; but they are secured from labour by the voluntary contributions of the people. As a body they are not surpassed by the clergy of many more civilized countries, in the extreme simplicity and virtuous manner of their life. Existing by the voluntary gifts of the people, their best interests are involved in the observance of an irreproachable life; their sermons are generally in praise of charity, while, however, the general doctrines of their religion are not left unexplained. The priests form an important and numerous order; and along

with them may be classed the Thi-la-shau or nuns, who are less numerous, and are generally old women. There are also occasionally some young women among them, who forsake the sisterhood as soon as they can procure husbands; neither priests nor nuns being bound to continue in their profession. The women generally are neither immured nor veiled, nor are they withdrawn from the company and conversation of men; but they are treated as mere slaves, all laborious duties being devolved upon them; they also manage most of the transactions of buying and selling. The habitations throughout the country are made of slight materials but are commodious. Bamboos fixed in the ground, and tied with strips of rattan compose the outline, and serve as the supports of the building; the walls are covered with mats, and the roof thatched with grass. These slight structures are sufficiently comfortable, but they are exposed, by the nature of their materials, to frequent conflagrations. The temples and monasteries are splendid structures, being covered profusely with carvings and paintings, varnished and gilded, but the materials consist principally of brick and mortar. Through the mischievous effects of bad government the population and prosperity of the country have long been and still are rapidly declining; the whole population, it is believed, does not amount nearly to three millions.

The Birman empire consists of two great divisions—PEGU, which comprises all the sea-coast, and the mouths of the rivers; and AVA or Birmah, which comprehends the upper country, and is the seat of the dominant people. For administrative purposes, the empire is divided into provinces or vice-royalties, of very variable extent. The most frequent civil division appears to be that into *myos* or townships, which are reckoned to amount to 4600. The towns, however, properly so called, and some of which are indeed little better than large villages, do not exceed thirty-two. Of the seven principal towns, Mr. Crawford gives the following conjectural estimate of the population;—Ava, Amarapura, and Sagaing, with their suburbs and districts, 354,200; Rangoon, 12,000; Prome, 600; Bassein, 3000; Martaban, 1500. Ava, the capital of the empire, stands on the left bank of the Irawady, in lat. 21° 50′ N., and long. 96° E. The native popular name of the city is *Angwa*, a fish pond, which has been corrupted by the Hindoos and Malays into *Awa*, and by Europeans into *Ava*; its official name is *Ratnapoora* (Jewel town.) Ava is surrounded by a brick wall 15½ feet high, ten feet thick, and 5¼ miles in circumference; the houses are in general mere huts, and are thatched with grass. Some of the dwellings of the chiefs are constructed of planks, and tiled; but there are probably not half-a-dozen of houses built of brick and mortar. The houses are thinly scattered, and large spaces are even wholly destitute of habitations. The town contains many temples, the tall white or gilded spires of which give in the distant view a splendid and imposing appearance. The capital is not confined to Ava, but embraces likewise *Sagaing*, a straggling town of mean houses on the opposite bank of the river, and *Amarapura*, with the large districts attached to the three, making together an area of 288 square miles. Ava was the ancient capital of the country; but Alompra, the founder of the Birman empire, built the new city of Amarapura (town of immortality) a few miles to the eastward, which became and continued the capital till 1822, when Ava was restored to its pre-eminence by the new king, who then ascended the throne. On the 23d March 1839, Ava was visited by one of the most terrible earthquakes ever known in that part of the world. The three cities of Ava, Amarapura, and Sagaing, were reduced to vast piles of ruins; every thing built of bricks, houses, monasteries, temples, and the city walls, were levelled with the ground; and of the immense number of pagodas, not one was left entire. The shock was felt throughout a space of 1000 miles southward from the borders of China, embracing the most populous parts of the empire; not a single pagoda, temple, or other brick building being left standing. But comparatively few people perished, their escape being owing to their living chiefly in wooden houses or bamboo huts.—(*Silliman's Am. Journal*, XXXVIII. 385.)

Rangoon stands on the north or left bank of the eastern branch of the Irawady, 26 miles from the sea. It is a poor and decayed town; but is the chief, and, indeed, almost the only port for foreign trade in the Birman dominions; for which purpose its situation is extremely convenient, from being so near the sea, and having an uninterrupted communication at all seasons, by the river, with the upper provinces. The tide rises 18 feet at neap tides, and at spring tides from 25 to 30. About two miles from the river is the great temple of Shwe-Dagong, of the shape of a speaking trumpet standing on its base, which is built of brick and mortar, and richly gilt all over. Its height is about 270 feet, and it is really a noble object. This temple is the most famous religious edifice in the Birman dominions, a celebrity which it owes to the legend which supposes it to contain eight true hairs of Gautama, brought as a trophy from western India many centuries ago, by two merchants. It is, in fact, what is not common in this country, a place of pilgrimage, and is frequented by many strangers. Nearly 60 miles to the north is *Pegu*, the ancient capital of the country when a separate kingdom, but now almost entirely deserted. It contains the famous temple of Shoemadoo, or the golden supreme, a structure of the same kind as the Shwe-Dagong at Rangoon, and 331 feet high. About 15 miles east of Rangoon is *Syream* or *Syriam*, formerly one of the chief ports of the kingdom of Pegu, and the seat of a great trade, before its harbour was shut up by the Birman conquerors.

Prome, written by the Birmans *Pri*, but pronounced *Pyi*, stands on the east or left bank of the Irawady, about 156 miles N.N.W. from Rangoon, in a narrow plain between the hills and the river: it is a very ancient capital, having been founded, according to the Birmans, about 443 years B.C. It is a thriving place, and fully as populous as Rangoon. About 70 miles E. by N. of Prome is *Tongo* or *Tongoo*, the representative of the Tangoo of the 16th century, the capital of a dynasty which caused memorable revolutions in the western and central parts of this region. It is said to be a place of considerable traffic and population.

Bassein or *Persaim* is a sea-port town, on the left bank of the most westerly branch of the Irawady, about 70 miles from the sea.

Martaban, on the north bank of the Saluen, at the point where the river separates into two branches, is built at the foot of a long steep ridge, and consists of mean houses, which are raised from the ground on posts. It has many old substantially-built monasteries, and several temples, one of which is 150 feet high, and is of a more chaste design than usual.

Bhamo or *Bamoo*, on the Irawady, 180 miles N.N.E. of Ava, near the junction of the Tapan or Pinlang or Bhamo river, which flows from China, contains about 14,000 inhabitants, of whom one-tenth are Chinese. The surrounding country is one of the most prosperous and wealthy portions of the empire; and a great trade is carried on between Bhamo and China. *Mogoung* or *Mong-maorong*, is a large fortified city, on a branch of the Irawady, about lat. 25° 20′ N., inhabited chiefly by Shyans, Chinese, and Singphos. In the vicinity are famous amber mines, which attract merchants from Yunnan, Munipore, and other places.

§ 2. *The Kingdom of Siam*

Is composed of Siam Proper, a portion of the country of the Laos, a part of Cambodia, and the Malay States of Quedah, Patani, and Ligor. It is situate between 5° and 29° N. lat., and 97° and 105° E. long., measuring about 900 miles in length from north to south, and from 50 to 400 in breadth, including an area of 220,000 square English miles, with a population of about 2,790,000. Its boundaries are: north, Laos; south, the Gulf of Siam, and the Malays; east, An-nam; west, Birmah, the British Birman provinces, and the Bay of Bengal. The greater part of the country is mountainous; but it contains

also fine valleys, and, near Bankok, a rich alluvial plain, watered by the Meinam. The soil is fertile, yielding in abundance fruits, dyewoods, medicinal gums, and timber; but it is badly cultivated, and thinly inhabited. Besides the Meinam, it is watered by many small rivers. The eastern coast of the gulf is skirted with innumerable islands, the smaller of which are uninhabited. On the shore of the Bay of Bengal, the Siamese territory extends 260 miles, including a great many islands, some of which are of considerable size, as Junk-ceylon, Panjang, Langkawi, Trutao, and Boutung. This part, however, of the kingdom is a mere wilderness, with only a few places inhabited. Siam Proper consists of the valley of the Meinam, which, at the southern extremity, does not exceed 60 miles broad; but it extends inland about 360 miles, and is bounded on both sides by high mountains. The climate and natural productions are much the same as those of Birmah. The government is a despotism of the most absolute kind. The name of the sovereign is confided only to a few individuals; in public he is mentioned by such epithets as these: the sacred lord of heads; the sacred lord of lives; the owner of all; lord of the white elephants; most exalted lord; infallible and infinitely powerful. Even the members of his body are spoken of in terms of adulation; everything belonging to or attached to his person is styled golden; to visit him is to approach to his magnificent majesty's golden feet, to speak in his golden ear, &c. The country is divided into districts; each of which is governed by a minister appointed by the king, aided by a governor and other officers; and the more distant provinces are placed under viceroys or rajahs. There appears to be no written law. All the people, except the Chinese, European, and American residents, are virtually slaves, or in a state of slavery, being obliged to labour on public works one month out of every three or four, according to royal pleasure, in building temples or junks, making roads, or performing any other work; for all which they receive no compensation but the glorious privilege of living in Siam or Thai, literally the free country. There are, besides, a number of slaves, who consist of captives taken in war, and debtors. The religion of Siam is Buddhism. The talapoins or priests, who are supposed to amount to 100,000 at least, are maintained by daily contributions from the people, by annual presents from the king; and by valuable gifts which they receive at funerals. They assemble daily in the temples to repeat prayers which they do not understand, as they are in the Pali language, with which very few are acquainted; they relieve the people from all devotional exercises and holy acts, except that of daily bestowing upon themselves boiled rice, and other offerings. For three months of his life every Siamese is obliged to serve as a talapoin, and the yellow robe is generally assumed at twenty years of age. They may quit when their term is expired; but if they take up the robe a second time, it must be retained for life. The talapoins are of different ranks or classes, and have one supreme chief, like the pope, who has under him various priests, corresponding to cardinals, archbishops, bishops, and other dignitaries; the whole system bearing a very strong resemblance to that of popery. The *wats* or temples are numerous and costly, many of them are indeed magnificent; they occupy the best situations in the kingdom; and are the residences of the priests, and the places of education for all male Siamese.

The Siamese belong to the Mongolian variety; their average height is five feet two inches. The lower limbs are stout and well formed; but the body is long, and consequently the figure is not graceful; the shoulders are broad, and the muscles of the chest well developed; the neck is short, and the head in fair proportion. The hands are large and the complexion of a dark olive, but not jetty. Among females of the higher classes, who pass their time generally within doors, the skin is of a much lighter hue; in some instances it might be called a very dark brunette. The forehead is narrow at top; the face flat, the cheek-bones broad, and the chin narrow, so that the whole is rather lozenge-shaped than oval. The eyes are remarkable for having the upper lid extended below the under, at the corner next the nose, but it is not elongated like that organ in the Chinese or Tartar races; the eyes are dark or black, and the white is dirty, or of a yellowish tint. The nostrils are broad, but the nose is not flattened like that of an African. The mouth is not well formed, as the lips project slightly; and it is still more disfigured by the habit of chewing areca-nut. The hair is jet black, stiff and coarse, almost bristly, and is worn in a tuft on the top of the head; the rest of the head being shaved or clipped very close. A few scattered hairs grow upon the chin and upper lip, which are usually plucked out. Though active, the Siamese are not a warlike people; they possess an inordinate self-esteem, which places them above all nations, except the Chinese, whom they acknowledge as superiors, and to whom they have sometimes paid tribute, and the Birmans, whom they rank as their equals. All their superfluous wealth they devote to the building of temples, to obtain what they believe the prospective salvation of their souls. They are mean, rapacious, and cruel, suspicious, vacillating, and procrastinating. Cringing and servile in the extreme to their superiors, they are arrogant, haughty, and tyrannical to their inferiors. They have, however, the commendable quality of filial affection, which is maintained through life with punctilious exactness. The son never stands in the presence of his parents, nor takes a seat on a level with his father. Even his magnificent majesty humbles himself once a month, and appears before his mother on his knees and elbows. The Queen dowager (when there is one), and Talapoin Pope, are the only two individuals in Siam who have no superiors. The Siamese call themselves *Tai*; the Shyans denominate them *Tai-yai*, or the great Tai. By the Birmans Siam is called *Yudia*, from the name of its former capital, and the people are designated *Yudia-shan* or *Yudias*. The Assamese, Shyans, and Siamese, are evidently sprung from a common stock.

Though larger than France, Siam does not contain one-tenth of the number of inhabitants. On comparing the births and deaths for a period of ten years, the population appears to decrease at the rate of one-ninth every year; and in less than a century the land would consequently be a desert, did not the constant influx of foreigners, for the purposes of trade, supply the deficiency. Siam already contains nearly as many Chinese as Siamese. Several causes concur in producing this depopulation; as polygamy, the great number of the talapoins, the extreme filthiness of the people, and their habit of living on every sort of unwholesome food. The Siamese have feeble constitutions; the least bodily exertion fatigues them; and a Chinese physician will distinguish a European among a hundred Asiatics, merely by feeling his pulse and without looking at him. The Siamese at present possess that portion of Cambodia which extends along the Maykuang river between 12° and 14° N. lat.

BANKOK, the capital, is situate on the Meinam, about 20 miles in a straight line from the sea, but 40 by the course of the river. It is irregular in plan, and everywhere intersected by canals; the streets are narrow and dirty; the greater part of the houses consist of miserable bamboo huts; but there are several richly gilt temples; and the palaces of the king and his grandees are large buildings, in the Chinese style. Many of the people live in large boats ranged along the sides of the river and canals. Bankok is the principal seat of the commerce of Siam; and the row of junks generally extends for more than two miles, riding at anchor in the middle of the river, where they often remain for months retailing their cargoes. The population, according to the government census in 1828, amounted to 401,300. Mr. Crawford, however, makes it only 50,000; Mr. Malcolm took some pains on the subject, and is of opinion that the city and immediate suburbs contain at the most about 100,000 souls. Within the walls, he says, there cannot be more than 4000 people.—(*Travels*, II. 139.) The climate of Bankok may be called hot, but is as pleasant and salubrious as that of any city of the east. The thermometer ranges about 13°; the highest mean temperature of the hot season, 86° 33'.

Ayuthia, properly *Si-yo-thi-ya*, also named *Siam* by the old European geographers, the ancient capital, stands on an island of the Meinam above Bankok, and is said to be nearly as populous. *Prabat*, 160 miles N. by E. of Bankok, contains an impression of Buddha's foot in a rock, which is the

grand object of pilgrimage among the Siamese. The only other places worthy of notice are :—*Pa nam*, at the mouth of the river, where it is 5 miles wide. *Chantibon*, on a river which falls into the s side of the gulf, 12 hours from the sea; *Ligor*, *Tahung*, and *Sungora*, considerable towns on the e side of the isthmus of the Malay peninsula. The district of Chantibon and of the neighbouring town *Tsiugvai*, are the proper country of the people called *Chong*, and the only part of the kingdom whi produces black pepper.

§ 3. *The Empire of An-nam*

Comprises *Tonquin* or *An-nam* proper, *Cochin-China*, the eastern and southern parts of *Camb* or *Kamboja*, and several islands in the Chinese Sea, along which it extends upwards of 1200 miles. lies between 8° 10′ and 23° 20′ N. lat., and between 105° and 109° E. long. being bounded on the nor by the Chinese provinces of Quangtong, Quangsi, and Yun-nan; on the west by Laos and Siam; a on the south and east by the ocean. It comprises altogether an area of about 120,000 square miles; a a population of 10,000,000. The country is naturally divided into two long narrow stripes by a rance mountains which extend in a direction parallel to the coast, from the borders of China to the mouth the Maykuang; Tonquin and Cochin-China being to the east of the range, and Cambodia, to the we Cambodia occupies the lower part of the valley of the Maykuang, with the alluvial plain or delta at mouth, and a small portion of the coast of the Gulf of Siam. It is said to be a fertile champaign co try; but no geographical details respecting it are known. Cochin-China consists of a long narrow st of land, extending more than 600 miles in length along the Chinese Sea, but nowhere exceeding 15 breadth. It is in fact a series of small transverse valleys divided by so many spurs from the long ran of mountains which forms its western boundary. The coast is beautiful and grand; the shore is dented with numerous bays; and the mountains, which rise several thousand feet in height, are brok into innumerable valleys and ravines. Tonquin expands to a much greater width than Cochin-Chi and consists chiefly of a large alluvial plain, watered by the Sang-kol and other rivers. It is the o part of the empire that is rich in metals; and produces large quantities of gold, silver, copper, and ir The climate is generally fine and healthy, the heat being tempered by the sea breeze; but a mater diversity of climate prevails in the different provinces, arising from difference of physical aspe and geographical situation. In Cambodia the seasons follow the same course as in Malabar, Beng and Siam; the rains commence about the end of May or beginning of June, and continue till Septe ber. In Cochin-China, the seasons are reversed; the dry season prevails during the south-west mo soon, and the wet season during the north-east monsoon; a change which is occasioned by the lo mountain border which intercepts the monsoons; the rains commence in October and continue March. In Tonquin again, the seasons are the same as in Cambodia. In both Tonquin and Cochi China the heat of summer and the cold of winter are excessive; at Hue the greatest heat of summ has been reported to be 103°, and the greatest cold of winter 57° Fahrenheit. The forests of Cochi China produce a variety of scented woods; true cinnamon, teak, ironwood, cedars, walnut, coc areca, betel, bamboo, rattans, ebony, and most of the products of British India. Tea also grows great abundance between 10° and 16° N. lat., which serves for the consumption of the lower order but the chiefs prefer tea from China, to which the native produce is somewhat inferior, owing to t improper manner of cultivating it. Cambodia produces gamboge, cardamums, aniseed, areca, indig the central provinces, pepper and two sorts of sugar-cane; Tonquin yields many kinds of varnish tre areca palms, &c. Cotton, rice, and the mulberry-tree are almost universal. There is also great varie of fine fruit; ginger, and spices of various kinds are also indigenous. The principal animals are t elephant, rhinoceros, tiger, leopard, buffalo, bear, horse, deer, goat, monkey, baboon, dog, cat; p cocks, parrots, and a variety of other birds of the richest plumage, curlews, plovers, and aquatic bir of all kinds. Alligators infest the larger rivers; the hooded snake, and several other noxious reptil infest the land; the seas abound with an inexhaustible supply of fish, and afford subsistence to a lar portion of the population. Mosquitoes and other insects abound in great multitudes.

The people consist of several races. The *Tonquinese* and *Cochin-Chinese* are a short, squat, and i favoured race; in features nearly resembling the Malays, but without any indication of ferocity their expression. On the contrary, says Mr. Crawford, their countenances exhibit an air of cheerfu ness and good humour; the women appear to be fairer and handsomer than the men. Their han arms, and feet are well formed, and the carriage even of the lower orders is graceful. They are mu in the same state of civilization and comfort as their neighbours. Besides these, the empire contai people of several other races:—The Cambodians, who call themselves Kammen or Cummin, speak language distinct from those of all their neighbours; but, in physical form, manners, laws, religio and state of civilization they bear a close resemblance to the Siamese. The people of *Chamra Tsiompa* on the south-east coast, between Cambodia and Cochin-China speak a peculiar dialect, d fering essentially from the languages of both An-nam and Cambodia, and profess a species of Bu dhism widely different from the religion of their neighbours, and more resembling that of the Jai in Hindústan. The coast of their country is now principally occupied by An-namese. The M occupy a strip of mountainous country, between Lao and Cochin-China, extending about 300 miles length by 50 or 60 in breadth; but little more respecting them is known than their name, and th they are an uncivilized but inoffensive people. All these are indigenous races. The strangers settl in the empire consist of Malays, Portuguese Christians, and Chinese. The Malays are confined the east coast of the Gulf of Siam, between the latitudes of 11° and 12°; they retain Mahometanis and speak the Malay tongue, intermixed with a number of Cambodian and Champa words. The Po tuguese are a mixed race who appear to have migrated from Malacca about the middle of the seve teenth century, and are found in different places along the coast. They are hardly distinguishab from natives of the country who have embraced Christianity. These Christians are among the poore and most abject part of the population. The Chinese form the most numerous class of stranger but their total number will not be overrated at 40,000, of whom 25,000 are engaged in working t iron, silver, and gold mines of Tonquin. Politically, the empire contains but two classes—the peopl and the nobility or mandarins. The highest offices are open to candidates of every class, and ve lately, all the great mandarins, the chiefs of the five columns of the empire, had been common soldier The son of a mandarin of the first rank is entitled only to the second rank; if he is in actual emplo ment as a mandarin, his children belong to the third class; but if he has not been employed, h children return after his death to the ranks of the people.

The empire is at present divided into three great civil divisions; Cambodia and Tonquin, which a governed by viceroys; and Cochin-China, which is under the immediate government of the e peror himself. The whole territory is subdivided into twenty-two provinces, of which six are Cambodia, seven in Cochin-China, and the remainder in Tonquin, the last of which is the mo populous and the most valuable division of the empire.

HUE, in Cochin-China, the capital, and the residence of the emperor, is a large and strongly for fied city, situate nine miles from the sea, upon the banks of a wide navigable river which falls into t Gulf of Tonquin. In lat. 16° 45′ N., long. 105° 32′ E. It is of a square form, about six miles in c cumference, surrounded by a rampart 30 feet high, which is cased with brick, kept in excellent orde and protected by bastions all in the European style. One side is washed by the river, and the other thr by a wide and deep canal. The interior is laid out in squares; but the town is rather paltry. T

palace is surrounded by handsome barracks; the citadel is a small quadrangular building, with strong and lofty walls; and the city, it is said, would require a garrison of 40,000 men for its defence. The population is believed to amount to 30,000. *Turon*, 60 miles S.E. of Hue, stands on a river which falls into a magnificent bay safe and most commodious for shipping, measuring five miles by two, and completely land-locked. *Quinhone*, one of the largest towns in the province, 15 miles from the sea, is situate on a navigable river which falls into a bay of the same name, 200 miles S. by E. of Hue; and rather more than 100 miles farther south, are the two magnificent harbours of *Camraigne* and *Nhatrang*, the latter of which is one of the naval arsenals of the empire, and is strongly fortified in the European style. In Tonquin the only place of importance is *Ketsho* or *Kachao*, the capital of the province, and the largest town in the empire, situate 100 miles from the mouth of the river Sangkoi, which is navigable for junks eighty miles up from the sea. The city is said to be at least three times as large as Hue, and probably contains 150,000 inhabitants. In Cambodia: *Saigon*, the capital, stands on a peninsula formed by two branches of the river Don-nai, one of the finest rivers of Asia, but till lately scarcely known to Europeans. The river may be navigated for 60 miles from the sea by vessels of any burden without a pilot; and by native craft, 20 days' voyage above Saigon, which is itself 15 leagues, or about 40 miles from the sea. Saigon is composed of two distinct towns, called Bingeh and Saigon, near the former of which is an immense citadel, almost rivalling in extent the fortifications of Hue. There is likewise a great naval arsenal. The houses are, as usual, built of wood, and thatched, and one storey high. Saigon is the principal commercial city of the empire, and contains at least 100,000 inhabitants. *Kamboja* (Cambodia, Eawek, Laweik or Loech), the ancient capital, is built on an island in the Maykuang, nearly 300 miles from its mouth; but is greatly decayed. Its royal palace and pagodas are in ruins.

About the middle of last century Tonquin, Cochin-China, and Cambodia formed separate kingdoms; Cochin-China being, however, tributary to Tonquin. These countries having been for many years in a state of anarchy, a revolution at length broke out in Cochin-China, in 1774, which led eventually to the present order of things. The great agents in the revolution were three brothers, called Tayons, men of the lowest condition, who defeated and put to death the king, and his son, who had advanced with an army to his father's rescue. But the wife of the prince having escaped with her son Gia-long, the latter, after many adventures, became ultimately king of Cochin-China and Tonquin, and established the present empire of An-nam; a result for which he was indebted principally to the resolution and sagacity of the French Bishop of Adran, and the skill and courage of a few European adventurers who accompanied him. Gia-long got possession of Hue in 1801; Tonquin was subdued in 1802, and Cambodia in 1809. He died in 1819, leaving his empire to an illegitimate son. The government exhibits despotism in its worst form; the only rich man is the king; he has fine palaces, large treasures, excellent fortresses; and vessels far superior to those of the Chinese. His officers are merely his tools, and share but little in his splendour. The nation at large is in the most abject condition; the people are poor, wretched, and filthy in the extreme, and are forced to give more than one-third of their labour, or an equivalent, to the king. The country is disturbed by frequent insurrections and rebellions; and emigration has lately prevailed to a vast extent, though prohibited by a despotic and decidedly anti-commercial prince, who forbids his subjects to carry the produce of their own country to other markets under pain of death.

§ 4. *The Country of the Laos*

Is a mountainous region situate to the north of Cambodia and Siam, occupying the upper vallies of the Meinam and the May-kuang, being bounded by An-nam on the east, Yun-nan on the north, Siam and Cambodia on the south, and Birmah on the west; and measuring about 800 miles in length by 400 in breadth. The climate is warm in the south, and temperate in the north, where it is a common occurrence to see snow and ice in winter. The atmosphere is very unhealthy during the rainy season, which lasts from April till October; during the other six months of the year the dry and fresh north wind purifies the atmosphere, and the forests can then be passed through without danger. The appearance of the country is magnificent, and the scenery beautiful; the soil is generally very fertile, except on the higher mountains, which present an arid appearance, with enormous rocks of strange shapes, concerning whose origin the Laos possess innumerable traditions. The country is rich in gold, silver, copper, and iron; almost every brook rolls down particles of gold; and if the people were acquainted with the art of mining, there is no doubt that they might acquire immense wealth. The vegetation is nearly the same as that of Siam. It is from the mountains of Laos that those enormous trees are obtained which serve the Chinese as masts for their largest junks. The country contains all sorts of wild animals, as elephants, rhinoceroses, bears, tigers, boars, porcupines, wild oxen, and buffaloes, elks, deer, &c. Crocodiles are not rare, and birds of every kind are innumerable. The inhabitants are called *Shyan* by the Burmans, *Lao* or *Low* by the Chinese; but they call themselves *Tai* or *Tie*. They seem to be the parent stock of both the Siamese and the Assamese; they are divided into three distinct races, with many subdivisions of tribes, and their language has a corresponding number of dialects. They are said to be a more civilized people than the Birmans; mild, humane, intelligent, and prosperous; and, though parts of their country are occasionally overrun and subdued by their neighbours, they have yet maintained a virtual independence. Some of the tribes still adhere to the ancient demon-worship; but most of them are Buddhists. *Zemmai*, on the Meinam, 400 miles N. of Bankok, is the residence of the prince of all the southern Laos, and is said to contain 25,000 inhabitants. It is called *Chanymai* or *Changmy* by the Siamese; and by Loubiere, in his history of Siam, *Chamé*, *Jangoma*, and *Shaimai*. Within a circuit of 50 miles are the cities of *Lagong* and *Moungpai*, each with 20,000 inhabitants; *Labong*, with 14,000; and several smaller towns.—(*Notice sur le Laos, par M. Pallegoix; Bulletin de la Societé de Geographie, Paris, Jan.* 1836.)

The *Singphos*, a kindred people, occupy both sides of the upper region of the Irawady, and spread from the Patkoi hills, in Assam, to China. They are divided into fifteen or twenty tribes, some of which are now British subjects, some are subject to the Birmese, and others are independent. They are a wild and somewhat lawless people; worship *nats* or demons; and have a great hatred of Buddhism. *Beesa*, called by the Burmans *Bejanoung*, and by the Shyans *Hukung*, near the head of the valley of the Kyen-duen, is one of the principal Singpho towns, between which and Assam there is constant and free intercourse.

§ 5. *The British Provinces.*

MARTABAN or MOULMEIN, RE or YE, TAVOY, and MERGUI or TENASSERIM, are situate along the eastern coast of the Gulf of Martaban, between 11° and 18° N. lat., and extend about 480 miles in length, by only 44 in breadth, comprising an area of 32,800 square miles; besides a great number of islands along the coast, which together comprehend about 1000 square miles. The whole length of the eastern frontier is formed by a range of mountains rising from 3000 to 5000 feet above the level of the sea, and chiefly composed of granite; the rest of the country consists of a series of hills, valleys, and plains, which extend from the mountains to the sea. Several passes lead through the mountains into Siam. The principal of these is the *Phra-song-chu*, or *Pass of the three pagodas*, in lat. 15° 48′ N., 110

or *Bruse* Island, forms the west side of the estuary of the Saluen, extending 17 miles in length N.-S., by 6 or 7 in breadth, and divided lengthways by a chain of moderately elevated hills. It is inhabited chiefly by Karyens, and produces a considerable quantity of rice.

PENANG, PINANG, or PULO-PENANG (Betelnut island), called in official documents PRINCE OF WALES' ISLAND, is situate near the northern entrance of the strait of Malacca, opposite the coast of Quedah, from which it is separated by a strait two miles wide. It is about 16 miles long, and from 8 to 12 broad, comprising an area of 160 square miles. It is of granitic formation, with a range of hills which extends through its whole length; but on the west and south sides there is a considerable space of level ground of good quality. Penang is considered remarkably healthy. In 1785, Captain Light, the commander of a country ship in India, having married the rajah of Quedah's daughter, received this island as a marriage portion; he transferred it to the East India Company, who agreed to pay for it 6000 dollars annually to the rajah; and they having in 1800 obtained a further grant of a district on the opposite mainland, now pay him 10,000 dollars a-year for both *Georgetown*, the capital of the island, is one of the neatest towns on the Indian seas; it has a capacious harbour, with good anchorage, and is well-defended. The population of the island amounted, in 1833, to 40,322. *Wellesley province*, the continental dependency of Penang, extends 35 miles along the coast, and contained, in 1833, a population of 49,553.

The territory of MALACCA, on the south-west coast of the Malay peninsula, extends about 40 miles along shore, by 30 inland, and contains about 800 square English miles, with a population, in 1833, of 34,000. The coast is rocky and barren, with detached islets of cavernous rocks; the interior is mountainous, with picturesque valleys. The highest peak, called *Lealdang* by the Malays, and *Ophir* by the Portuguese, rises to the height of 4000 feet. The climate is healthy; the temperature is very equal, the thermometer ranging only from 72° to 85° during the whole year. The city of *Malacca* stands on a plain, with numbers of trees interspersed among the houses, near the mouth of a small river, in N. lat. 2° 14′, and E. long. 102° 12′. It is regularly built, and has an excellent anchorage, but a bad harbour. The situation is eminently salubrious. Population about 5000. The Anglo-Chinese college, one of the most valuable institutions in the east, was established here in 1818, by Drs. Morrison and Milne, for the cultivation of European and Chinese literature, and the instruction of native youths in the principles of Christianity; it is supported by voluntary contributions, and has several schools attached to it, at Malacca, Tavoy, Moulmein, and Rangoon. Malacca was founded by the Malays after their migration from Sumatra; it was afterwards in possession successively of the Portuguese, the Dutch, and the English; and was finally ceded by the Dutch to the English, in 1825, in exchange for Bencoolen in Sumatra. Though fallen, the city is still the head-quarters of the British military force on the Straits.

SINCAPORE or SINGAPORE (*Singhapura*, Lion-town) is an eliptical-shaped island, about 50 miles in circumference, 27 long by 15 broad, comprising an area of 270 square miles, and situate at the southern extremity of the Malay peninsula, from which it is separated by a long strait, only a quarter of a mile wide at its narrowest part. Within a circuit of 10 miles, there are about fifty other islands, containing altogether an area of about 60 square miles, all within the limits of the settlement, the total circumference of which, including the interjacent seas, is about 100 miles. The surface of the principal island is beautifully diversified with vallies, plains, and irregular hills; it is well stocked with timber, and the trees are generally of great size. A more delightful climate is probably nowhere to be found; the variation of seasons is scarcely perceptible; there is neither summer nor winter; even the periodical rains are short, and not very well marked. The thermometer ranges from 71° to 89°. The soil is fertile, the scenery beautiful, and the air deliciously balmy. The town is situate on the south side of the island, in N. lat. 1° 17′, and E. long. 103° 51′, on the banks of a salt creek, which is navigable for lighters. The streets are regularly built in the English style, chiefly of brick or freestone, generally two storeys high, finished with taste and neatness, and all painted white, which gives the town a fine and imposing appearance from the offing; its symmetry and beauty, however, are considerably impaired by the uncouth structures of the Chinese, Malays, and Hindoos, who adhere to the styles of their respective countries. The Chinese are the most numerous and most industrious class of the population. The harbour or road is commodious, safe, of easy access, and defended by a fort, which is well garrisoned and occupies a beautiful situation. In the vicinity of the town is a level, fertile, well-cultivated plain, laid out in gardens and plantations, intersected with excellent carriage roads, which are bordered with shrubs and trees of perpetual verdure, and contain the villas of the English merchants. Singhapura was a very ancient Malay settlement, but had been abandoned since the 13th century. In 1818 it was taken possession of by Sir T. S. Raffles; and the sovereignty confirmed to Britain, in 1825, by a convention with the King of the Netherlands, and the Malay princes of Johore, to whom it belonged. It had been previously possessed for a few years by some Malay fishermen and pirates; but so rapidly did the new settlement prosper, that when the first census was taken, in January 1824, the population amounted to 10,683; in 1834, it had increased to 26,349, of whom only 130 were white; the rest being Malays, Chinese, and other orientals. It has become a central emporium for the trade of the Chinese and Javan Seas; native vessels from every part of the Indian Archipelago find here a market for their produce, and a supply of the commodities which they require. A lucrative trade is also carried on with Cochin-China, Cambodia, Siam, Malaya, and Sumatra. There are no export or import duties. The language of general commercial intercourse is Malay. The island is abundantly supplied with all kinds of provisions, in great variety and of excellent quality. It possesses, indeed, so many advantages that it has been called "the paradise of India, the home of plenty, and the abode of health."

Penang, Malacca, and Sincapore, are dependencies of the Government of Bengal, and are under the immediate charge of the Governor of Penang, who has assistants resident at Malacca and Sincapore. By means of these three settlements, the British Government has now the command of the northern passage to China. The jealous and exclusive commercial schemes of the Dutch have been completely frustrated by the bold step of Sir T. S. Raffles, in taking possession of Sincapore; a measure at which the Dutch were highly indignant. But when they found they were left without a remedy, they surrendered Malacca too, as the possession of that city would no longer answer their purpose of closing the straits.

§ 6. *The Malay States.*

The Malayan peninsula is a long narrow tract of about 750 miles, and 170 where broadest, but varying from that to a breadth of only 60. The great mountain range which divides the British Birman provinces from Siam, appears to extend without interruption to the southern extremity of the peninsula, occupying a great part of its breadth. The whole territory is of primitive formation, exhibiting everywhere masses and peaks of granite. It produces a considerable quantity of gold; but the staple production of the whole region, as far north at least as the 15° N. lat., is tin. The districts best known produce pepper, and other aromatics, and several kinds of gum. The forests, which seem to occupy a great part of the interior, contain aloewood, eaglewood, sandalwood, and *cassia adorata*, a kind of cinnamon. Vegetation is, indeed, everywhere rank and luxuriant; the animals are nearly the same as those which are found in the neighbouring countries to the north. The northern districts

belong to the king dom of Siam, and are chiefly inhabited by Siamese; but the southern portion, inhabited by the Malays, is divided into a number of petty states or kingdoms. *Quedah* or *Kedah* extends along the west coast from the Trang river, lat. 7° 20′ N., to the Krian, in 5° 10′, with a population of about 500,000; *Perak*, from the Krian to the Runkup, lat. 3° 59′—population, 35,000; *Salangore*, from the Runkup to the Lingie, in 2° 35′—population, 12,000; *Malacca*, from the Lingie to the Cassang—population, 35,000; *Johore*, from the Cassang on the west coast to the Sedilly on the east coast, in lat. 2° 15′—population, 25,000; *Pahang*, from the Sedilly to the Kemamang, in lat. 4° 15′—population, 40,000; *Kemamang*, a very small inland district, with 1000 inhabitants; *Trengano*, from the Kemamang to the Basut—population, 30,000; *Calantan*, from the Basut to the Baruna—population 50,000; *Pitani*, from the Baruna to the Tara, in lat. 7° 20′—population, 54,000; *Ligor*, from the Tara to about the 9° 20′ N. Of these, Quedah, Patani, and Ligor are subject to Siam; Malacca is a British province; the others are independent, being governed by rajahs. The inland mountains are inhabited by savage tribes, some of them negroes, who are in a state of general anarchy and barbarism.

The *Malays*, who have given their name to the peninsula, migrated in the twelfth century from the territory on the banks of the river Malaya, in Sumatra, to escape subjugation to a king of Java. They seem to be a branch of the indigenous population of that great island, and probably of Java also, but are now settled along the coasts opposite to those islands. They are in general of a ferocious character, and celebrated for their piratical habits; a propensity to war and violence being the ruling passion of the race. The country being unsettled and laid waste by perpetual feuds, the peasant driven from his village and lawful means of subsistence, and tempted by the smooth seas, the safe navigation, and the shelter from pursuit afforded by the numerous islands, creeks, and rivers of the straits, and by the charms of a life so congenial to his free and restless spirit, is induced to scour the ocean for precarious subsistence by fishing, or plunder, or both, as opportunity offers. There is, however, something highly romantic, and even interesting, in the national character of the Malays. They are not wholly illiterate; for they possess letters, and, as Mahometans, are acquainted with the Koran. They shew great ingenuity in several mechanic arts, especially in the fabrication of arms, and in the highly-wrought temper and finish of their form dable creeses. In some of their principal settlements they carry on a considerable trade, and can boast of wealthy merchants; but nowhere is slavery or slave-dealing more common. A bull-dog does not differ more in form and quality from a greyhound than a Malay from a Hindoo. The broad face and course lineaments, the bull neck, short stature, muscular limbs, and glaring yellow hue of the former, are in direct contrast with the symmetrical features, the olive hue, the slender limbs, and the often elegant figure of the latter. Their mental dispositions and other natural qualities are in equal opposition. A Malay will not submit to a insult or an injury, without harbouring the purpose of deadly revenge, which he will carry into effect with all the art and subtlety of a fox; he will smile while he stabs, the better to throw his victim off his guard. Sometimes an infuriate Malay will run *amuck*, that is, strike and stab every person who falls in his way, till he is himself knocked down or captured. The laws and institutions of the Malays are said to exhibit the worst parts of Islam, mixed up with certain superstitions of their own; they practise circumcision, and believe in witchcraft; they buy their wives, often at an enormous price; the poorest seldom giving less than 60 dollars, which frequently reduces them to slavery, for debtors are obliged to work for the creditor till they can pay. They have fines for theft, and even for murder, but in most cases the punishment depends on the power of the injured party to exact it. The government is in the hands of sultans and rajahs, whose power is extremely limited, and is chiefly confined to the precincts of their own residence. Every village has its chieftain; and these dignitaries seldom agree in any common object, but, on the contrary, are often at war with each other. The justice which they administer to their followers depends entirely on their caprice. They are honoured with high-sounding titles; but it is difficult to conceive a greater caricature of royalty than a Malay sovereign in his wooden palace or barn, naked, except round the waist, squatted on a mat, and eagerly bargaining for the sale of cattle and fowls, or vegetables. Their perfidy is such that no treaty with them can be relied on; they have been known to murder at their own table a invited guest. Plunder and bloodshed seems indeed the invariable object of every Malay, and such is their audacity, and so general is the spirit of piracy among them, that should even a large ship-of-war meet with a serious accident in their seas, she will be surrounded with hundreds of praus, waiting for the first favourable opportunity to plunder the wreck, and murder the crew.

Malay towns consist of a group of huts of wood and thatch, heaped together without order or regularity. The *prahus* or *proas*, used by the pirates, are generally about eight or ten tons burden, well manned, and remarkably swift, particularly with the paddles which are commonly used. They are generally armed with swivels on their bows, centre, and stern, of small calibre, but long range. When preparing to attack, strong wood-n bulwarks, called *apilans*, are erected, behind which the crew entrench themselves, fighting with their long guns, until their prey is disabled, or till the gong sounds the signal for boarding. But they mainly depend for safety and success on their skill in paddling, the swiftness of their boats, and their knowledge of the intricate channels among the islands, or over the bars of the rivers, into which they generally contrive to escape, thereby baffling their pursuers; and often leaving them aground on a shoal or a mud bank. They scarcely ever attack except during the lull between the land and the sea-breezes, or in a calm. They make their attacks and move in small fleets of from six to twenty prahus. During October, November, December, and January, they are found cruising up and down along the west coast of the peninsula, and the opposite shore of Sumatra. From June till the end of September, they are often to be seen about the islets to the south of Sincapore, and in the creeks and rivers of the Johore coast. February, March, and April, are spent in fishing, collecting sea-weed, and preparing for future expeditions. The crews are armed with boarding spears, some of which are of very great length, creeses, hatchets, and swords, muskets, blunderbusses, and a variety of missiles. The most noted haunts for pirates on the west coast of the peninsula are the *Bonting*, *Aroa* or *Aroar*, *Coco's*, *Piring*, *Dinding*, and *Sambilang* islets; those on the Salangore coast; and the islets between Cape Rachado, and the Lingie river. The rivers *Muhare*, *Perak*, *Patch*, *Koran*, *Muar*, *Formosa* or the *Battu-pahat* river, and formerly the *Lingie* river; the straits of *Calang* and *Dryon*, *Point* or *Cape Romania*, and its vicinity, and the *Carimon* isles to the south; on the east coast the creeks and small rivers of Johore up to Pahang; the *Kemamang* river; those of *Trengano*, and *Calantan*; also the islands of *Timoang*, *Pulo Tingie*, *Redan*, and *Tor*. Their armed vessels, however, are often ready for war or trade as occasion may offer, and some of them are really traders, who assert the necessity of carrying arms for their own defence; but the British cruisers invariably burn, sink, or otherwise destroy all that are found with arms on board. One of their chief resorts for their slave trading is *Pulo-Nias*, on the west coast of Sumatra.—(*Journal of the Asiatic Society of Bengal*, Nov. 1836.—*United Service Journal*, Apr. 1837.)

For the materials of this Section, the South-eastern Peninsula, we are principally indebted to *Crawfurd's Journal of his Embassies to Ava, Siam, and Cochin-China*; *Capt. Low's History of Penang*; to the *Journal of the Royal Asiatic Society of Great Britain*; *The Rev. Howard Malcolm's Travels in the Birman Empire*; *Klaproth's Travels round the World*; *the Asiatic Journal for August and October 1840*; *Marten's History and Statistics of the British Colonies*; *Captain Benjamin Morrell's Voyages*; *Journal of the Asiatic Society of Bengal*, for 1839 and 1840, &c. &c.

THE CHINESE EMPIRE.

THIS empire extends over a very large portion of eastern and central Asia, comprehending upwards of 3,000,000 of square English miles, of which 1,298,000 are within the limits of China Proper, and the remainder in the subject territories to the west and north.

ASTRONOMICAL POSITION.—China Proper is situate between 20° and 42° N. lat., and 98° and 123° E. longitude.

DIMENSIONS.—The greatest length, from north to south, is 1500 miles; and the greatest breadth, from east to west, about 1100 miles. The superficial area comprehends 1,298,000 square English miles, and the coast line is upwards of 2500 miles in length.

BOUNDARIES.—*Northern* :—Mantchouria and Mongolia, or Chinese Tartary. *Western* :—Thibet. *Southern* :—Birmah, An-nam, and the country of the Laos. *Eastern* :—The Pacific Ocean.

NAME.—The name of *China* is very probably derived from that of the dynasty of *Tsin*. The country is called by the natives *Chung-kwo*, central kingdom; and *Tang-shan*, Hills of Tang, the name of one of their most celebrated dynasties. The present ruling family have given to it the name of *Ta-tsing-kwo*, the Kingdom of Great Purity. In the proclamations issued by government, especially those addressed to foreigners, it is often called *Teen-shan*, Celestial Empire. The natives call themselves *Chung-kwo-teih-jin*, Men of the Middle Kingdom, or *Han-jin* or *Tang-jin*, Men of Han or Tang. The whole empire is often designated *Teen-hea*, Under Heaven.

GENERAL ASPECT. — China consists of a series of river *basins*, and of low lands along the sea-coast, divided by ranges of hills, which rise in some places to a very considerable elevation. Yun-nan, the south-western province, is very mountainous, and sends out two branches eastward; the one of which separates the basin of the Si-kiang river from the coasts of the Gulf of Tonquin; the other separates it from the basin of the Yang-tse-kiang, and its affluents, whose basins are themselves divided by diverging ranges from each other, and from the coasts of the east sea. The basin of the Yang-tse-kiang is divided from that of the Whang-ho by a continuation of high land which diverges eastward from the Peling mountains, on the borders of Tartary, but which, terminating before it reaches the coast, leaves a large alluvial plain between the mouths of these two great rivers. The remaining portion of the country lying between the Whang-ho and the Gulf of Pe-che-lee, consists of the basin of the Pei-ho and the Eu-ho, having the hills of Shantung province on the south, and a cross range on the west, but communicating with the basin of the Whang-ho, by an opening at the angle formed by the two ranges. The geology of China is unknown; the only elevation which has been ascertained by European observers, is that of the mountain over which is the *Pass of Meilan*, between the provinces of Kiang-si and Quang-tong, which rises to the height of 8000 feet above the level of the sea. The appearance of the country is very varied; between Peking and Canton, a distance of 1200 miles, the members of the British embassy observed every variety of surface, but this uniformity was very remarkably disposed in large masses. For many days they saw nothing but one continuous plain, without the smallest variety; for as many days they were hemmed in by precipitous mountains, naked and unvaried as the plains; and, for ten or twelve more, their course lay through lakes, swamps, and morasses. There was a constant succession of large villages, towns, and cities, with large navigable rivers communicating with each other by artificial canals, both of which were crowded with boats of every form. Neither hedges nor trees were to be seen throughout the country.

The southern basin and the adjoining coast compose the provinces of *Yun-nan*, *Quang-si*, and *Quang-tong*. Yun-nan presents a singular variety of mountain and valley; possessing a more alpine character than any other part of China, and yet containing some extensive and finely watered plains. It is also said to be the richest of all the provinces, in metals and minerals, among which are gold and very fine copper. Quang-si and Quang-tong, or the two Quang provinces, lie to the east of Yun-nan,

and consist principally of a large plain bordered by mountains. *Fokien* and *Che-kiang* are maritime provinces to the north of Quang-tong, and consist of ridges of mountains at no great distance from the sea, interspersed by numerous valleys. Fokien is, comparatively speaking, so unproductive, that its numerous population are compelled to devote themselves to maritime affairs, in which they are favoured by the deep bays and fine harbours which the province contains. Its inhabitants are the boldest and most adventurous of the Chinese, and furnish the mariners for the imperial fleet of war-junks, and the greater part of the emigrants to foreign countries. The basin of the Yang-tse-kiang, and its affluents, is occupied by the provinces of *Setchuen*, *Kwei-chew*, *Hou-quang*, *Kiang-nan*, and *Kiang-si*. Setchuen is very imperfectly known. Its mountain border on the west is lofty, but the eastern part of the province slopes into a plain. Kwei-chew consists partly of a plain, but a large portion is composed of the mountains towards Yun-nan and Quang-si. Hou-quang consists principally of an extensive and highly fertile plain, watered by numerous lakes and rivers, and producing in abundance, beyond any other part of the empire, every thing that can minister to the use of man. Kiang-nan consists, with little interruption, of a great alluvial plain, which extends from the sea inland, along both sides of the Yang-tse-kiang and the Whang-ho. Kiang-si occupies the basin of the Kankiang and the Poyang-hou, and is profusely watered by numerous streams which pour down from the mountains that border on its south, east, and west sides. The northern provinces of *Shen-si*, *Shan-si*, *Honan*, *Shan-tung*, and *Pe-che-lee*, occupy the basins of the Whang-ho and Pei-ho and their affluents, with the mountains which divide and encircle them. Shen-si, the north-west province of China, abounds with mountains, everywhere diversified with fertile and well-watered valleys, but is nowhere so rugged as to shelter savage tribes. Shansi is also partly mountainous, and occupies the eastern side, as Shen-si does the western side of the valley of the Whang-ho, in its long southerly course from the great wall, before it turns finally to the east. Honan lies between Shan-si and Kiang-nan, occupying the space between the two great rivers, and from its central situation is called the "flower of the middle." It is described by the missionaries as being so fertile and beautiful as to have merited the appellation of the garden of China; and appears to consist of an extensive champaign country, bordered on the west by high mountains covered with forests. Shan-tung consists of a long mountainous promontory, jutting far out into the Yellow Sea, with the valleys which border it on both sides. Pe-che-lee is the most northerly province, and consists of a wide naked plain rising gradually to the Tartar frontier, where it becomes decidedly mountainous. The new province of *Kan-suh* is composed of hills and deserts, lies to the west of Shen-si, and comprehends a great part of what was formerly included within that province.

GULFS, BAYS, STRAITS.— *Gulf of Tonquin*, between the island of Hainan and the province of Quang-si and Tonquin; *Gulf of Canton*, in Quang-tong; *Strait of Formosa*, between Formosa and Fokien; the *Yellow Sea (Whang-hai)*, between Corea and the northern provinces of China; the *East Sea (Tung-hai)*, between Formosa and Corea; *Gulfs of Pe-che-lee* and *Liaotong*, in the north-western part of the Yellow Sea. The water in these gulfs is generally shallow, with a muddy bottom.

ISLANDS.— *Hainan*, between 18° and 20° N. lat., and 108° and 112° E. long., is separated by a narrow and shallow channel from a long peninsula which juts out from the province of Quang-tong. It is about 190 miles long, by 70 broad; a great part of it, particularly on the northern side, is level, and is inhabited by Chinese; but the interior is rugged, and possessed by very rude tribes. The climate is hot and unhealthy. The capital is *Kiong-cheou-fou*, on the north coast. The *Ladrones* or *Robber's Islands* extend along the coast between Hainan and Canton, so near each other and the mainland, and so irregular in their form and position, as to appear like fragments disjoined from the continent. They have a very bleak and rugged appearance, and have long served as a haunt of pirates. *Tye-pun-shan*, or *the Great Ladrone*, in lat. 21° 57′ 10″ N., long. 113° 44′ E., is steep and bold, and may be seen at the distance of fourteen leagues from the masthead of a large ship, or nine from the deck. This island, with the *Little Ladrone* and *Potow*, to the north-north-west, bounds the eastern side of the great channel which leads to Macao roads. *Heang-shan*, a very large island formed by two branches of the Canton river, forms the western side of its main channel, and terminates seaward, in a small peninsula which contains the Portuguese town of Macao. The *Asses' Ears* and the *Lemas*, are small islands, barren and uncultivated, at the eastern side of the Gulf of Canton. *Lintin*, the station of the opium smugglers, a small island in the Canton river, 21 miles N.E. of Macao, and 23 outside of the Bocca-Tigris. The peak of Lintin, a high mountain in the centre of the island, forms an excellent landmark. *Lantao* or *Tyho*, a large island on the eastern side of the Gulf of Canton. *Hung-kong*, a small rocky island, 15 miles in circumference, recently ceded to the British as the seat of their trade with China, is situate to the east of Lantao. *Hae-tan*, a large island off the coast of Fokien, between which and the mainland there is a labyrinth of islands and rocks, lining the coast for many miles. *Quesan*, a cluster of islands between 29° and 30° N. lat., off the coast of Che-kiang. *Chew-shan*, *Chow-shan*, or *Chusan*, a large and fertile island, between 30° and 31° N. lat., surrounded by a great number of smaller islets off the north-east coast of Che-kiang. Between the Quesan islands and Chusan harbour, a space of about 60 miles by 30, the number of islands exceeds 300, among which there are almost as many valuable harbours, or places of perfect security, for ships of any burden. This circumstance, together with their central situation in reference to the east coast of China, and the vicinity of Corea, Japan, Loo-choo, and Formosa, attract a considerable trade, which centres at Ning-po, a city of Che-kiang, to which all these islands belong. *Ting-hai-heen*, the capital of Chusan, is a large city, 6 miles in circumference, and surrounded by a good wall and ditch. Near Chusan is the island of *Poo-to*, inhabited by about 1000 Bonzes, who attend a number of large temples, which are resorted to by mariners to return

thanks after a perilous voyage. *Tsong-ming* or *Tsung-ming*, a large alluvial island, 5 or 6 leagues long by 2 broad, at the mouth of the Yang-tse-kiang, surrounded by dikes to protect it from the sea, and containing about 2,000,000 of inhabitants, who are industrious and enterprising, and celebrated as excellent fishermen and sailors. One part of the island is used for the cultivation of rice, another for the growth of various grains, and the third, though apparently the most unpromising, and producing not even a blade of grass, is so impregnated with salt, as not only to furnish a sufficient quantity for the consumption of the inhabitants, but also a large surplus for exportation. The banks which bar the entrance of the Yang-tse-kiang are really formidable; they are about twelve in number, visible at low water, and several miles in circumference. *Woo-teaou-sha* are immense banks at the mouth of the Yellow river, stretching about 80 miles out to sea, but gradually sinking, and running out in spits. As the coast is not visible, even at the distance of two miles, many vessels are wrecked upon them; but no measures are ever taken by the Chinese government to point out the dangers. *Yun-tai-shan*, an island with a double range of hills, north of the Yellow river. *Staunton*, *Alceste*, *Miatau*, small islands off the coast of Shan-tung. *Sha-loo-poo-tien*, low sandy islands or shoals, off the mouth of the Pei-ho, in the Yellow sea. *Potocki's Islands*, a group off the southern coast of Liaotong. *Sir James Hall's Group*, *Hutton's Island*, *Amherst Isles*, *Corean Archipelago*, all in the Yellow sea, along the west coast of Corea. *Quelpaert*, a large island in the East sea, 60 miles from the south-west point of Corea.

Ta-wan (called by its first Portuguese visitors *Formosa ilha*, Beautiful island), in the East sea, between 22° and 26° N. lat., and 120° and 121° E. long., is 250 miles in length, by 80 in breadth, and lies about 20 leagues from the coast of Fokien. It is divided throughout its length by a range of mountains, some of which reach the limit of perpetual snow. From this ridge there is a gradual slope to the west coast; and far into the sea, on that side, the water is shallow. This side produces immense quantities of rice and sugar, is in possession of the Chinese, forming part of their province of Fokien, and contains two considerable towns, *Tai-wan*, the capital, and *Ke-lang-ching*, the latter of which possesses the only good harbour in the island, and is situate on the north coast. The eastern side of the island is mountainous and precipitous, and is inhabited by independent tribes of the Malay or Polynesian race, who live chiefly by hunting. Along the coast are the smaller islands of *Steel*, *Soho*, *Samasanna*, *Betel-Tobago-xima*, and *Lamay*; and in the channel, between Tai-wan and Fokien, are the *Pescadores* or *Pang-hoo* or *Pehoe Islands*, a numerous group of various dimensions, all extremely barren; but, having good harbours, they serve as a place of refuge for the junks in the north-east wind, which blows here during the greater part of the year. The Chinese keep a numerous garrison here, as the security of Tai-wan depends on the possession of these islands.

RIVERS.—The Kiang (river), called by Europeans the BLUE RIVER, and named, near its mouth, YANG-TSE-KIANG (river of the son of the ocean), is the largest in the empire. It is formed by the union of three branches, named the *Kin-cha*, the *Yalou*, and *Min*, of which the first is considered by Klaproth to be the principal. The *Kin-cha-kiang* (gold-sand river), called *Mourousi-oussou* and *Bourai-chou*, in Thibet, takes the name of *Ta-kiang* (great river), in Setchuen, and runs through that province, Hou-quang, and Kiang-nan, into the East sea. The length of its course is about 3280 miles. Its principal affluents are the *Yaloung*, *Min*, *Lo*, and *Kan*, on the right; the *Kia-ling*, and *Han*, on the left. Its course is very winding, but the general direction is nearly east, through the middle of China. It appears to be the longest, as well as one of the largest, rivers of Asia, and conveys an immense body of water into the ocean. Where it is crossed by the imperial canal it is two miles wide, and the stream runs with such force, that Lord Amherst's embassy found great difficulty in sailing up to the Poyang lake; and were unable to make way at all against the stream, except with a strong north-easterly breeze. The influence of the tide extends 400 miles up the river.

The *Whang-ho* (*Hoang-ho* of the French), or YELLOW RIVER, has its sources in the Koulkoun mountains, in the country of Hoho-nor. Turning abruptly north, it passes to the outside of the great wall, and, after flowing in an easterly direction, turns south, and flows S. by W. for about 400 miles, at the end of which it turns again very abruptly east, and flows into the East Sea, about 100 miles to the north of the Yang-tse-kiang, after a course about 3000 miles. Its stream is so excessively rapid as to be nearly unnavigable throughout the greater part of its course. It carries along with it an immense mass of yellow mud in a state of solution in its waters, and its frequent floods occasion great damage to the country, and expense to the government, in maintaining artificial embankments. Its principal affluents on the right are the *Wei-ho* or *Ouei-ho* or *Koei-ho*, in Shan-si, and the *Hoei* or *Hoai-ho* in Kiang-nan. The *Fuen-ho*, in Shan-si, is the principal affluent on the left. The tide ascends the stream of the Whang-ho as far as in the Yang-tse.

The *Pei-ho* rises in the Kingkan hills, and falls into the gulf of Pe-che-lee. Its principal affluents are the *Tshao-ho*, the *San-kan-ho*, and the *Hou-thou-ho* or *Eu-ho*, which is crossed by the imperial canal.

The *Si-kiang* (Pearl river) flows through Quang-si and Quang-tong, past the city of Canton, where Europeans give it the Portuguese name of *Tigris*, and call its mouth the *Bocca-tigris*. A little above Canton it is joined by the *Pe-kiang*, and below Canton, by the *Tong-kiang*, both from the north.

LAKES.—The *Tong-ting-hou* is a large lake, 300 miles in circumference, in the province of Hou-quang, which pours its waters into the Yang-tse-kiang. From the borders of this lake to the city of Vootshan, or an area of 140 English square miles, there is a great number of lakes nearly touching each other, from which circumstance the province has received its name of Hou-quang, the country of lakes. The *Poyang-hou*, in Kiang-si, has a circumference of 90 or 100 miles, and receives four large rivers, whose accumulated waters are discharged into the Yang-tse. It lies in the midst of a great extent of swampy land, with rivers flowing into it from most points of the compass. Its waves sometimes rise so high as to render it, in the opinion of the Chinese, as dangerous as the ocean. Its surface is studded with sandy islands just rising above the water, and covered with humble dwellings, the abode of fishermen, who pursue their calling on the lake. The *Tai-hou* to the south-east, the *Kao-yeou-hou* to the north-east, the *Hong-tse-hou* to the north, and the *Tsiao-hou* to the south-west of Nanking.

CLIMATE. — The temperature of China is considerably lower than that of the European countries in the same latitudes; and is more subject to excessive variations. At Peking, in the latitude of central Spain, frost occurs daily in December, January, and February, and very often in March and November; and this cold is often followed by excessive heat. At Peking there are, properly speaking, only two seasons, winter and summer; and, according to the observations of Father Amyot, the mean of the greatest heat is 121°, that of the greatest cold 63° below zero, and the medium heat of the year 55°. At Canton, under the tropic of Cancer, the mercury frequently falls below the freezing point in January, while in summer it sometimes, though not often, rises to 100°. The mean of the monthly range of the thermometer at Canton, for the years from 1829 to 1838 inclusive, stood thus:— January 52½°;

February 55°; March 62½°; April 70°; May 77°; June 81°; July 83°; August 82°; September 80.033°; October 73¼°; November 65¼; December 57.134°. The number of rainy days in each of the ten years averaged 122. — (*Silliman's Am. Jour. of Science, April* 1840.)

The first English embassay, on their arrival in Canton in December 1793, found that a fire was not disagreeable; thirteen years afterwards, Krusenstern saw ice selling in the streets during the same month. In February 1836, Canton was visited by a fall of snow, which continued for several hours, to the great surprise of the natives, few of whom had ever before seen such a phenomenon; and to the great delight of the European residents, who were thus agreeably reminded of home. Notwithstanding, however, these extremes of heat and cold, the climate must be generally characterised as highly salubrious, a circumstance which no doubt arises from the extent of cultivation and drainage. During August and September it is generally hot and sickly, as the wind then blows from the west over the parched deserts of the interior. Hurricanes also are not unfrequent, and are sometimes extremely violent.

VEGETABLE PRODUCTIONS. — The southern provinces possess the usual products of tropical regions, few of which, however, are seen to the north of the Pass of Meilan. Between that mountain range and the Whang-ho, various species of orange, lemon, tea, sugar-cane, rice, pomegranates, black and white mulberries, the vine, the walnut, chesnut, peach, apricot, and fig, are seen growing on the same spot. Camelias, bamboos, and cypresses are also found; the whole zone abounds with coniferæ, and the mountains are adorned with pines. The principal object of cultivation is rice; but in the north-western provinces there are districts too cold and dry for this grain which is therefore replaced by wheat. Yams, potatoes, turnips, onions, beans, and, above all, a kind of white cabbage, called *potsai*, are cultivated. But not the least important of the vegetable products is *cha* or tea, of which the Chinese botanists reckon 200 species. It grows in the most sterile ground on the sunny ridges of hills, chiefly between 25° and 30° N. lat.; though it is also found in various other parts of the country. The cultivation appears to be confined to the temperate zone, extending to the northern provinces. The tea-districts, properly so called, are thus stated by Dr. Abel: That of the green tea is in Kiang-nan, between 29° and 31° N. lat., at the north-western base of a ridge of mountains which divides Che-kiang and Kiang-nan; the black-tea district in Fokien, is contained within lat. 27° and 28° N., and is situate on the south-eastern declivities of a ridge of mountains which separates Fokien from Kiang-si. Green teas are very little used by the Chinese; though an infusion of tea is used universally throughout the country, and is brought forward on all occasions, and at all times of the day. Public tea-houses are also found in every town and village.

ANIMALS. — China contains scarcely any animals which are not common to other countries. The elephant is found in the south-western provinces, and the one-horned rhinoceros lives in the marshes of Yun-nan and Quang-si. The musk deer is sometimes found in the western provinces; deer, boars, foxes, and other wild animals abound in the forests. The Chinese rear, though in small numbers, all the domestic animals of Europe, the horse, the ass, the ox, the buffalo, the dog, the cat, and the pig. They have also two-humped camels of a small size. They eat almost indiscriminately every living creature which comes in their way; dogs, cats, hawks, owls, eagles, and storks are regular market commodities; and, in default of these, a dish of rats or snakes is not objected to; and cockroaches, and other insects and reptiles are used for food or medicine. Some of the native birds are very splendid; the fish are in great variety; and from China we have derived the gold and silver fish of our ponds and vases. The insects are numerous and beautiful. The white-wax insect produces an important necessary of life. Sir George Staunton mentions it as an insect not much exceeding the size of a fly, covered with a white powder, which is imparted to the stems of the plants on which it lives. This powder is collected by the people, who apply to it hot vegetable oil, and the mass, when cold, coagulates and becomes as firm as bees' wax. As a medicinal drug, it is highly esteemed throughout China, and, for making candles, is reckoned superior to bees' wax. The silkworm is said to have come originally from China. The people rear this valuable insect in small houses erected for the purpose in the midst of the mulberry plantations; and even the inhabitants of the towns rear it, and purchase mulberry leaves for the purpose. Destructive ants abound in the southern provinces.

PEOPLE. — The Chinese are considered by physiologists as belonging to the Mongolian variety of the human race. The head is almost square, the nose is short without being flat, the complexion yellow, the beard thin and the eyes oblique. There is

however, a great difference between the southern and the northern Chinese, and between the mountaineers and the inhabitants of the plains and sea-coasts. A Chinese female is vain of her beauty in proportion to the smallness of her eyes, the protuberance of her lips, the lankness and blackness of her hair, and the extreme smallness of her feet. Among the men, corpulence, as the indication of an easy life, commands a certain degree of respect; and men of thin figure are regarded as destitute of talent. People of quality allow the nails of their fingers to grow, and stain the hair of the head and the beard black. The Chinese are generally of a middle size; few tall men are found among them, and still fewer dwarfs or deformed persons. The women can be seen with difficulty, and generally those only of the lower ranks, who are not distinguishable from the men by any delicacy of feature or complexion. Their persons indeed are considered to be the reverse of elegant or beautiful. With respect to character, peace, industry, order, and regularity appear to prevail among them. Flagrant crimes, and open violations of the law, are not common; but petty delinquencies and frauds are very prevalent. The supreme ruler of the country is the bamboo, which is applied, at the discretion of the magistrates, to all ranks of offenders; and on such occasions the delinquent is obliged to return thanks to the magistrate for his paternal care of his morals. The attachment of kindred is very strong, and the support of the aged and infirm is inculcated as a sacred duty, which appears to be very strictly fulfilled. Towards strangers, however, and persons not of their own family, their indifference is extreme; and in cases of accident, they allow their neighbours to perish before their eyes, without offering the smallest assistance. They all marry early, and are very prolific, the consequence of which is a very numerous, and generally redundant population, who, with all their industry and moderation, have often great difficulty in obtaining the means of subsistence. Emigration is prohibited; but great numbers of men notwithstanding contrive to leave the country; numerous colonies have settled in the Indian Archipelago, and some have even gone to Calcutta, Mauritius, and Brazil.

The community of China appears to be divided into four ranks or orders; of which the literati or learned occupy the first place; the husbandmen the second; the manufacturers the third; and the merchants the fourth. But in this country, as everywhere else, wealth raises its possessor above such conventional distinctions. The merchants accordingly, though lowest in rank, can command the services of their superiors; but it is only the *learned* who are yet allowed to occupy places in the government. The only persons possessing hereditary rank are the members of the Imperial family, who are distributed into five classes, all distinguished by wearing a yellow girdle; but they possess no political powers or privileges, and have only very small revenues assigned to them for their subsistence. The consequence is, that some of the more remote of these branches are in very indigent circumstances. Being likewise brought up to a life of idleness, they are in many cases ignorant, dissipated, and worthless; but they are kept under very strict control. Besides the descendants of the emperors, there is another class of imperial kinsmen, descended from the brothers or uncles of the first Tartar emperor, who are distinguished by a red sash and bridle. Every thing connected with their dress and equipage is subject to minute regulation, and they are as strictly watched as the others. It is said there are still some descendants of the Ming dynasty in existence, but they have laid aside the yellow girdle through fear of persecution. Polygamy is not permitted; a man can have only one legal wife, but he may have as many *tsie* or concubines as he pleases, or can afford; and the offspring of the latter possess many of the rights of legitimacy. The wife is espoused with regular marriage ceremonies, is the equal of her husband in rank, and possesses certain legal rights, such as they are; but the tsie is bought for money, and is taken into the house nearly as any other domestic. The women are, however, the slaves of their husbands and masters; they live and die in ignorance, and every effort to raise themselves above the rank assigned to them is regarded as impious arrogance.

Besides the subjects of the Emperor, there are within the limits of China Proper several tribes who have always maintained their independence. The higher districts of Yun-nan are occupied by a hardy highland race called *Lolo*, of a totally different character from the Chinese. Such is their valour, and the strength of their mountain fastnesses, that the Imperial Government has been obliged to rest satisfied with a nominal acknowledgment of homage, leaving the internal government to be administered by the native hereditary chiefs. In the neighbouring province of Kwei-chew are several tribes of rude people called *Miaotsi*, who inhabit the mountain districts, and have hitherto bid defiance to the military force of the empire. The people who

possess the mountainous districts of Hainan and Formosa are likewise nearly, if not altogether independent.

The Ladrones, or Pirates of the islands which stud the southern coasts of China, form a very numerous and organized body, and possess a fleet of at least 500 well-manned vessels, of from 10 to 250 tons, the largest carrying 12 guns, and all of them armed, besides the ordnance, with abundance of small arms, spears, swords, and boarding krises. They are under strict discipline, and often evince great bravery.

POPULATION.—With European statists the population of China has long been an insoluble problem; and their estimates have varied from about 30 to 370 millions. Balbi, by his approximative method, determines it to be 150 millions. In 1793 Sir G. Staunton was informed by a mandarin of high rank that it then amounted to 333 millions; and in 1832 Mr. J. R. Morrison of Canton stated, in the Companion to the Anglo-Chinese Almanack, as the result of a census taken in 1813, and published by imperial authority, the amount as having then been 360,443,000. Mr. Medhurst says that it was, in 1812, 361,221,900, and adds, that after the fullest consideration of all that has been said on the subject, after the most patient investigation of native documents, and after extensive inquiries and observations among the people for more than twenty years, he cannot resist the conviction that the population of China Proper is as above stated; besides the population of Formosa, and the tribes of Chinese Tartary. Mr. Gutzlaff also declares himself to be "fully persuaded that the last imperial census is as near the truth as it can be ascertained." Those parts of the empire which he visited were extremely populous. He took the trouble of examining some parts of the census, and of numbering the houses in small districts, and invariably found that the population was under-rated. And Mr. Morrison, in publishing the statement already referred to, observes that it "will probably serve to set at rest the numerous speculations concerning the real amount of population in China. We know from several authorities that in China the people are in the habit of diminishing rather than increasing their numbers in their reports to government. And it is unreasonable to suppose that in a work published by the government, not for the information of curious inquirers, but for the use of its own officers, the numbers reported by the people should be more than doubled, as the statement of some European speculators would require us to believe." The numbers in our table of the extent and population of the provinces are those published by Mr. Morrison, taken from the *Ta-tsing-hwuy-leen*, or Collection of Statutes of the *Ta-tsing* dynasty, published in 1825, according to a census taken in the 18th year of the reign of Kia-king, under the authority of his imperial Majesty.

EDUCATION, SCIENCE, and LITERATURE.—One of the most curious features of Chinese policy is the encouragement given to the cultivation of literature, which is professedly the only channel of introduction to advancement in the State, and to the acquisition of office, rank, and honours. With the prospect of such rewards the number of students is very great, and a taste for letters is almost universally diffused. Schools abound in every town and village, and the best education which the country affords may be procured on the most moderate terms. Certain magistrates are appointed in every province to take charge of the candidates for employment, to direct them in their studies, and twice a-year to hold public examinations, when small presents are distributed to the most deserving. At Peking is a grand national college named *Han-lin-yen*, which is supported by Government, the members of which are the chief literati of the empire. Nothing, however, but old established principles are taught; the scholar of the present day must not venture to go beyond the sages of ancient times; learning is consequently at a complete stand-still. As a further encouragement to literature, the press is left free, and any one may print what he pleases, taking his risk of the consequences; the Government being very rigid in suppressing "wicked, corrupt, and seditious publications," and in punishing their authors. The antiquity and importance of Chinese literature have only of late years been duly appreciated in Europe, and have but very recently begun to attract the attention of students. "The Chinese literature," says M. Abel-Remusat, "is incontestibly the first in Asia, in respect of the number, the importance, and the authenticity of its monuments. The classic works, named *King*, go back to a very remote epoch. The philosophers of the school of Confucius have made them the basis of their labours upon morals and politics. History has always been the object of attention, and the Chinese annals form the most complete and continuous that exist in any language. The custom of competition has given a powerful stimulus to political and philosophic eloquence. Literary history, criticism, and

biography, are the subjects of a crowd of works remarkable for their order and regularity. The Chinese possess many translations of Sanscrit books upon religion and metaphysics. The literati cultivate poesy, which is subject to the double yoke of metre and rhyme; they have lyric, narrative, and descriptive poems, theatrical pieces, romances of manners, and romances wherein the marvellous prevails. They have, besides, a great number of special and general collections, libraries, and encyclopædias, and in the last century they began the printing of a collection of select works in 180,000 volumes! Notes, glosses, commentaries, catalogues, indices, extracts arranged in the order of subjects, lend their aid to facilitate research. They have excellent dictionaries, in which all the symbols of their writing, and all the words of their language are explained with the greatest care, and in a very regular order. Books are printed upon silk paper, and as this paper is extremely fine, they are obliged to print only upon one side; the parts are classed, numbered, and paged; finally, there is not, even in Europe, a nation that has so many books, books so well made, so commodious for consultation, and at so low a price;" and notwithstanding there is no country where real science and literature are at a lower ebb.

Geography has been cultivated from the most ancient times; a fact which is proved by the descriptions of the empire given in the *Chou-king*, five centuries B. C. The Jesuits constructed a new map of the empire by order of the Emperor Kamhi, between 1707 and 1715, and a new edition of it, with corrections, was published in 104 sheets in 1760, by order of the Emperor Kien-long, under the direction of the missionaries. The imperial geography forms 260 volumes in quarto, with maps and plans. It embraces every topic: topography, hydrography, monuments, antiquities, natural curiosities, industry, productions, commerce, agriculture, government, population, general history, biography, and bibliography. Astronomy has always been held in honour, but its progress has been very limited. Their knowledge of mathematical science appears to be very low; they use the decimal system of arithmetic, and execute with rapidity all its operations by means of a machine, the swanpan, the use of which has passed into Russia and Poland. Their theory of military tactics displays some learning, and has even fixed the attention of some generals of the school of the great Frederick; but their artillery is very defective; their muskets are inferior, and their powder is very inefficient. The Chinese were, nevertheless, acquainted with the art of making gunpowder before it was known in Europe, and they have long been accustomed to make fireworks which produce a surprising effect. Their medical science is mixed with superstitious practices, and founded upon imaginary theories. Their pharmacopœa, however, is rich, and they have good books of medical natural history, accompanied with plates; but their physicians are the only cultivators of natural history. Their arts of design are very imperfect; they are unacquainted with perspective; and the only objects which they paint well are plants, flowers, houses, boats, and other objects of inanimate nature. Their sculpture is distinguished only by its nice finish; but they execute in wood sculptures in relief of remarkable fineness. Their architecture has neither grandeur nor elegance; and yet the order, and the fine colours with which their buildings are adorned, have a seducing effect. Magnificence is reserved for public buildings, such as the emperor's palace, temples, towers, triumphal arches, town walls, and gates. Their bridges, canals, quays, and particularly the embankments of the Yellow river, are as remarkable for the persevering industry which has produced them as for their usefulness. The Chinese music, though founded upon a very complicated system, wants, nevertheless, according to European taste, both harmony and melody.—(*Balbi's Abregé*, p. 787.)

The manners of this numerous people have one striking characteristic, and their religious opinions and practices are precisely similar throughout the empire. When the main features of the Chinese character have been studied in one place and in one person, they have been studied in all, and when one train of argument has been discovered which suffices to silence the objections of one individual, it will be equally effective on all other occasions. The uniformity and invariableness of the Chinese mind is to be traced perhaps to their possessing one set of opinions on philosophy and religion; which being laid down in their ancient books, and transmitted from age to age, constitute the public and universal belief on these topics, and run through the whole mass of society. Hence the missionaries find the Chinese always using the same arguments, and starting the same objections, which having been often answered before, may be easily answered again. In the system of Chinese literature there is no harmony or continuity. The most deplorable ignorance stands in immediate juxtaposition with science of more than ordinary refinement; an astonishing accuracy and minuteness of detail are often combined with a total want of general

principles, or with principles grossly incorrect. Here and there are observable foundations of immense mental strength, on which no superstructure is erected; or, perhaps, some superstructure of so uncouth an appearance, and so useless and fragile, as to prove only the perverted ingenuity of the artist; and on the other hand, surprise is excited by the prospect of some noble and magnificent edifice, which seems to have sprung from the ground, like the palace of Aladdin, without any perceptible agency of sufficient power to call it into being. All the intellectual combinations of China are monstrous; they possess uniformly a mingled character of civilization and barbarism. The people have been from time immemorial separated from the rest of mankind, and no free intercourse has ever shaped their rude inventions into forms calculated to make them suitable to mankind in general. All that they have done is specifically Chinese; all their productions have a national character; they are stiff, contracted, and incapable of being wrought into any foreign composition.

The spoken language of China is composed of monosyllables, of which there are scarcely 350 which a European can distinguish from each other; but the Chinese are able, by various modulations of the voice, to distinguish many more—about 1300. The syntax is also very meagre; declensions and conjugations are wanting, and their place is supplied by circumlocutions. There is also a written language, expressed by about 80,000, or, according to some writers, 40,000 different characters or symbols, each representing a separate object or idea; and as this written language is common to the whole empire, the natives of the various provinces, though speaking different dialects, and mutually unintelligible when speaking their own dialect, can, nevertheless, all read the written language, and have thus a ready means of general communication. Even beyond the limits of Chinese dominion the Chinese written language is understood; and throughout Cochin-China, Corea, and Japan, it is a common object of learning. The multiplicity of characters might seem an insuperable obstacle in acquiring the language; but these are in fact compounded of 214 elementary symbols, which form a clue to their labyrinth; and by the help of which, dictionaries have been formed that enable Europeans to acquire a complete knowledge of it in a comparatively short time. It has been the general opinion among learned men in Europe that the written and the spoken languages of China have no connection or relation to each other; that the visible characters represent *things* or *ideas* directly, without reference to the *sounds*, by which the same objects may sometimes be expressed; that they are real characters, in short, which have no connection with words, and might have been invented by a race of beings destitute of the faculty of speech. But Dr. Ponceau of Philadelphia has succeeded in throwing new light on the subject, by shewing that these so-called real characters represent words only and not ideas, at least directly, and that they are not common to the other nations which surround China in any other way than the words of the French language, for example, are common to the nations of Europe; that is, that they are common to the people of those nations who have studied and learned to write them, and to speak the Chinese language along with them, and to no others. To use the Doctor's own words, "nations whose languages, like the Japanese and the Loo-chooan, are polysyllabic, and have inflections and grammatical forms, cannot possibly understand Chinese books and manuscripts, unless they have learned the Chinese language." Every syllable in Chinese is a word, and as each character represents a syllable, it follows that each character represents a word. The Japanese have a syllabic alphabet of 47 characters; and their historians relate that, in A. D. 284, their sovereign having sent an embassy to the emperor of China to request him to send a person to civilize his kingdom, Vo-nin, a prince of the imperial blood, was sent. He introduced the Chinese civilization, language, and literature; and for a long period Chinese was the only written language in Japan, and the only record of its learning. It was not till A. D. 733 that a selection of 47 characters was made from the Chinese, and applied to the Japanese language by one Kibi, a man of high rank, who modified the characters so as to adapt them to the syllables of which his alphabet was composed. The Chinese language, thus introduced into Japan, still remains there as a learned language, and is taught as such. Many of its words have also been adopted by the Japanese into their language; an event which has also happened in various other countries; but the Japanese who have not learned the Chinese language, cannot make themselves understood by the Chinese in writing any more than in speaking. Chinese books are constantly translated into Japanese and *vice versa;* a labour which certainly could not be necessary if the two nations, as is commonly believed, used the same written characters for

both languages. There are also various native dictionaries in Chinese, with Japanese explanations; and in Japanese, with interpretations in the language of China. Chinese books, with interlineary Japanese translations, are also used in Japan. Dr. Ponceau, in saying that foreigners, and even the Chinese themselves, read the Chinese written language only by translating it, and that the symbols directly represent words, is undoubtedly right; for each of the characters of which it consists has attached to it one of the 1300 monosyllabic words of the spoken language; but as these are too few to afford a distinct sound for each character, it happens, in some cases, that one monosyllabic sound represents 70 or 80 written characters, so that it is scarcely possible to read the written language aloud intelligibly even to those who can read it for themselves. Indeed it frequently happens, that, in reading a paper, the auditors are assisted by the reader making, by a motion with his hand in the air, or with his fan, the shape of the character, or at least of its key, to remove ambiguity. The same ambiguity would prevail in the spoken language itself were it not obviated by the use of expletives, that is, by compounding the monosyllables, of which the language has been said entirely to consist, into polysyllabic words. For instance, when a man is speaking of his father, a term which is expressed by *foo*, a monosyllable which has 70 or 80 different meanings, according to the different written characters which it represents, he employs *foo-chin*; and, instead of *moo* for mother, *moo-chin*. The syllable *chin*, which signifies kindred, not only removes at once all doubt as to the meaning of the speaker, but is one proof at least that the Chinese is as necessarily and inevitably, in some cases, a polysyllabic language as English itself, or any other. But that Dr. Ponceau is wrong in saying that the characters only represent words directly, and not things or ideas, is evident from the fact that each of the 70 or 80 characters represented in speech by the single syllable *foo*, conveys a distinct idea to those who read it, while the same idea could not be communicated to another person distinctly, by merely reading the monosyllabic name. In short, the real difference between the so-called monosyllabic language of China and the languages of other countries is, that in the former the written characters represent syllables with distinct meanings, while in the latter they represent the simple unmeaning sounds of which syllables are composed; but, in both, it is only by compounding syllables into longer words, in Chinese perhaps less than in other languages, that a copious and generally intelligible speech, applicable to any thing beyond the simplest ideas, or to the purposes of any other than those of unthinking savages, is, or can be produced. The educated classes throughout the country communicate with each other in the dialect of Kiang-nan, the seat of the last native dynasty, which is usually called the Mandarin language.

RELIGION.—(See pages 125 and 126.) Besides the religion of Buddha or Fo, of Confucius, and of Tao-sse, nearly all the other forms of mythology which are conspicuous in the page of history now exist in China. To use their own expression, says Dr. Milne, "her gods are in number like the sands of Havy river." There are gods celestial, terrestrial, and subterranean; gods of the hills, of the valleys, of the woods, of districts, of families, of shops, of the kitchen; gods who preside over thunder, fire, rain, grain, births, deaths, and small-pox; and genii of the mountains, rivers, lakes, and seas, birds, beasts, and fishes. Astrology, divination, geomancy, and necromancy, every where prevail; and every one possesses spells and charms. As might be expected, the god of wealth is the most popular deity among merchants and tradesmen; and is represented with a wedge of gold in his hand. Seamen worship as their god *Tung-haï-vaung*, the lord of the east sea; and also pay their vows and burn incense to a goddess who is the exact counterpart of the heavenly patroness of the mariners of Spain, Portugal, and Italy. But all these superstitions are more or less mixed with the worship of Fo, the number of whose temples and priests (bonzes) is incalculable. These shrines are found not only in every city, town, and village, but also in private houses, where the priests are occasionally employed to instruct the children; but no temple can now be built without special permission; and the sacred edifice is used for state purposes by the officers of government, for the reception of foreign ambassadors in travelling through the country. The Chinese have no sabbath, and no division of time by weeks. They labour every day in the year, except the first, which they devote to family visiting, and the last, which they consecrate to the memory of their ancestors. They celebrate the festival of the full moon by keeping up a noise and riot all night; and during the first two days after the first full moon of the year they celebrate the feast of lanterns, on which occasion the whole country is illuminated. Every house, and every village, with all the shipping on the canals and rivers, are then lighted up with painted lanterns. This appears to be a religious festival; but its origin and history are forgotten.

Since the first arrival of the Portuguese on the shores of China, in the 16th century, the catholic church has been earnestly employed in endeavouring to convert the inhabitants to her form of Christianity; but the result of all her efforts, during three centuries, is the existence of only about 200,000 native Christians in the empire, and chiefly in the western and northern provinces. Of late years protestant missionaries have also been labouring zealously to gain proselytes to their doctrines, and have translated the Bible into the Chinese language; but hitherto without much, if with any, real success. There are also some thousands of Jews in China, whose principal residence is at *Khai-fung*, in the province of Honan. A few Mahometans are found in Shen-si and Kan-suh.

Government.—The Chinese Government is a sort of patriarchal despotism; limited, however, by the right of representation which is lodged in certain classes of magistrates, and still more by the obligation under which the emperor is placed, of having to choose all the agents of government, according to fixed rules, from the literary class. The members of this class form a true aristocracy, which is perpetually recruited by promotions from among the numerous students. Young men of all conditions are admitted to trial for the third literary rank; those who obtain this enter themselves as candidates for the second, to attain which is a necessary step for those who are to exercise public functions. From the second rank they may rise in the same way to the first, which qualifies them for the highest offices and employments. This institution is as old as the seventh century; its members are the only nobility of China, but their rank is not hereditary. It dies with the possessors; but, as might be expected, their children form the favoured class of students, and have the best chance of promotion. Hereditary dignities are confined to the princes of the imperial family, and to the descendants of the philosophers Confucius, Mencius, and Laokiun. The supreme power is exercised by the emperor, who takes the title of Son of Heaven, and August Emperor. The succession is hereditary in one family, but the emperor selects his successor according to his own judgment or caprice. For administrative purposes China is divided into eighteen large provinces, which are subdivided into districts arranged in three classes according to their importance, and designated by the terms *foo*, *chew*, and *heen*, usually annexed to the names of their chief towns. Each governor general, or viceroy, has commonly two provinces under his charge. There are besides, in each, an intendant of the province, a superintendent of the literati, a director of finance, a criminal judge, and two intendants, the one of the salt-pits, and the other of the public granaries. Each district has likewise its particular magistrates, who are invested with administrative or judicial functions. The emperor nominates to all employments from a triple list furnished by the personal or privy council. Many reports, decrees, and other official documents are published under the form of instructions addressed to the magistrates or the people; they are published regularly in the Peking gazette, from which they are extracted and again published in the provincial gazettes, which are printed in the principal cities. When the emperor pursues any measure, or promulgates any law to which public opinion is supposed to be unfavourable, he publishes in the gazette his reasons for it. The emperor believes himself responsible to his subjects for all the calamities which they experience, such as famines, epidemics, earthquakes; and, when such occur, publicly accuses himself of having offended heaven by neglecting his duties, and imposes on himself certain penances, such as seclusion, fasting, &c. The public functionaries, both civil and military, are divided into nine ranks, distinguished by buttons of the size of a walnut, formed of different jewels and metals, which are fixed on the top of their conical caps. Their common title is *Quan;* but they are usually called by Europeans *mandarins*, a word derived from the Portuguese verb *mandar*, to command. The first rank includes ministers of state, and presidents of the tribunals, who are distinguised by a red gem; the second, viceroys and governors of provinces, who have an inferior red gem; the third, judges, treasurers, and salt-superintendents, a dark-blue stone; fourth, superintendents of circuits, and governors of counties or provincial districts, a light-blue stone; fifth, rulers of departments, a crystal globe; sixth and seventh, magistrates of districts, a white stone globe; eighth, assistant magistrates, a flowered gilt globe; ninth, village magistrates and inferior officers, a plain gilt globe. There are six supreme tribunals at Peking, to which all the affairs of government are referred, and which make their reports to the emperor for his decision and approval. The first selects, promotes, and superintends, all the civil officers of the empire, and is the centre of all power and patronage; the second has the charge of the revenue, and superintends the census of the population, taxes, coinage, &c.; the

third takes charge of all public ceremonies, and the different forms of religion; the fourth manages the affairs of the army, navy, and ordnance, and appoints the various officers; the fifth, or police department, superintends all matters relative to the detection and punishment of crimes; the sixth, or tribunal of public works, takes charge of all the palaces, public offices, mines, canals, manufactories, bridges, &c. Besides these there are a board of music, the colonial office, and the Too-cha-yuen or censors, whose office it is to watch over the words and conduct of the emperor. There is also another board of censors who preside over the deliberations of the other tribunals, and report to the emperor; who may be said indirectly to govern the empire. Under the Mandchew emperors the Chinese appear to have declined in civilization; and the government is now in a state of deplorable and increasing weakness. The people have ceased to respect laws which are openly contemned by public functionaries. Piracy and smuggling are acknowledged as trades; in some districts robbery is committed openly, and in all these cases the mandarins are quieted by a share of the profits.

Since the conquest of China by the Mandchews, two centuries ago, a large party has existed who are anxious to restore a native dynasty of sovereigns. The members, being closely watched, formed themselves into a secret society, ruled and organized like that of the Jesuits, from one of whom indeed, it is said, the plan of the institution was obtained. The society soon extended its branches into every province, and its members are now supposed to amount to several millions. They are united by the most solemn oaths of secrecy, and by pledges of mutual assistance; they have signs and pass-words known only to themselves; possess a common purse, and are remarkable for their implicit obedience to the commands of their unknown superior. In 1794 they made a vigorous effort to overthrow the reigning dynasty, and their ravages were not suppressed till 1802. Occasional revolts have occurred since, but the society have conducted their operations so cautiously that all the efforts of the imperial ministers have failed to discover their leaders. The connection, real or supposed, of this society with the Jesuits, was the cause of the cruel persecutions of the Chinese Christians at the beginning of the present century. The Society are called *Pe-lien-kiao* (worshippers of the flower of the nymphæa or water lily).

FINANCES.—There are no authentic documents from which any account of the public revenues can be obtained; Mr. Medhurst has given the following account of them:—"The revenue is derived principally from the land-tax, which is paid partly in kind and partly in money; it is generally a very light impost, amounting not, as some suppose, to one tenth, but more usually to one fiftieth or one hundredth of the produce. There are also taxes on pledged articles, and more particularly a heavy impost on salt; while custom-houses are established on the sea-coast, and at the most important passes in hills and junctions of rivers, so as to secure the mercantile as well as the agricultural population. Some of the revenue thus derived is kept in the provinces, to pay the army, navy, and police, and to provide against famines, while a considerable proportion is forwarded to Peking for the immediate service of the emperor and his officers. We cannot, therefore, form a correct estimate of the resources of China, unless we consider all that is sent to the capital and expended in the provinces, as being alike drawn from the labour of the people, and devoted to the service of the state. Thus the revenue of the Chinese empire will appear to be as follows:—

Land-tax, paid in money sent to Peking,	£10,581,755
Ditto, paid in grain, ditto,	4,230,957
Customs, paid in money, and sent to Peking,	493,666
Grain kept in the provinces,	31,596,569
Money, ditto ditto,	9,568,375
	£56,471,322

This revenue, when divided among 361,221,900 persons, amounts to three shillings and three halfpence per head: and if that only which is sent to Peking be reckoned, namely, £15,206,378, it will not amount to much more than tenpence per head. Some persons may doubt, how a government over so great a country can be maintained for so small a sum, and how a people under an arbitrary rule can be let off with such insignificant imposts; particularly when, in a free country like our own, and in a time of profound peace, each individual contributes upwards of two pounds annually, as his share of the public burthens. But it must be remembered that China has few or no resources beyond itself; that her foreign commerce is limited, and, com-

pared with the population, insignificant; that comparatively few subsist by manufactures; and that almost all the inhabitants are dependent on agriculture. In a country, therefore, where the consumers fully equal the capabilities of the soil, and where every production is hastily devoured by a needy population, there is little left for a government to glean, or, to use a Chinese simile, to squeeze, out of the already exhausted pockets of the people. It is not unlikely, also, that the present peaceful state of the country, and the willingness with which the Chinese submit to the Tartar yoke, is to be ascribed mainly to the light and insignificant burthens pressing on the people, who would soon complain, and perhaps revolt, if more heavily taxed. But how can the government manage to maintain an immense establishment of civil and military officers, besides an army and navy of nearly a million of men, upon fifteen or even fifty-six millions of pounds sterling? To this it may be replied that the pay of a Chinese soldier is only fourpence a-day; that the salary of the highest officer under government does not exceed £8000 per annum, of which there are not many; there is no more than one officer to ten thousand people; and that most of these have no more than £50 per annum: thus it is quite possible for the government to manage a country so thinly officered and so poorly paid, upon a comparatively small sum of money. Besides which, there is no national debt in China, so that all that is gathered goes to the actual maintenance of the government, and is not expended in paying the interest on obligations formerly contracted, to be defrayed by future generations.

In the report of the Anglo-Chinese college for 1829, there is an estimate of the amount of land-tax paid in different provinces, extracted from the Ta-tsing-hwuy-teen, or "Collections of statutes of the Tartar dynasty," by which it appears that the average rate of land-tax per *mow* (or Chinese acre, somewhat smaller than an English acre), is from fifteen cash to one hundred, or from one penny to sixpence: this, when calculated at its highest value, and multiplied by the number of acres in China under cultivation, will amount to about £12,000,000 sterling. This statement agrees with the common report of the natives, who affirm that from one to two per cent. of the produce is the utmost of what is exacted by the government in the shape of land-tax."

Army and Navy.—The army is numerous but inefficient; and consists principally of an undisciplined rabble, armed with matchlocks, bows and arrows, and spears The number has been variously estimated by European writers, from about half a million to 1,954,450. The most precise account of the military force of China which we have been able to find is contained in a communication by Father Hyacinth Bitshurin to the Academy of Arts and Sciences at St. Petersburgh, in August 1837. The Mandchews, with the Mongolians and Chinese who accompanied them on their invasion of China, form a distinct military community, which is divided into "standards," and subdivided into sections and companies, each company consisting of 150 men. The Mandchews of Peking consist of 681 companies, amounting to 102,150 men; the Mongolians quartered in that city consist of 204 companies, amounting to 30,600 men; and the Chinese 266, amounting to 39,900. The whole force of the Mandchews on duty in the provinces amounts to 840 companies, or 126,000 men. To these are to be added the "wild hunters," who form 97 companies, consisting of 14,550 men. These troops garrison the principal cities and towns of the empire; but, in addition to them, there is an army of native Chinese, amounting to 660,300 men, who do the ordinary duty of posts, both within and beyond the frontiers of China. The Government maintains 3000 regular troops in Thibet, besides a number of irregulars; and in Turkestan, numerous Chinese garrisons are established in all the towns, which are furnished from the adjacent province of Kan-suh.—(*United Service Journal*, xix. 97.) This, however, is only the peace establishment; in time of war, it is calculated that 10,000,000 of soldiers may be levied; but we are assured that the greater part of these exists only on paper, and that it is very difficult to muster an army when one is required. With the exception of the men stationed on the frontiers, the whole of this mighty host consists of men of peace, who are always in garrison, and are employed in preventing any violation of law. But they suffice, such as they are, to keep the country quiet; and may be considered rather as an armed police force than an army.—(*Canton Register, November* 27, 1838.) But, since these opinions were expressed, the Chinese have come in contact with British troops, and have shown an unexpected degree of efficiency and resolute bravery; though they are ill armed, and not very expert in the use of their artillery.

The imperial navy is said to consist of 1763 vessels; of which 1036 are employed

for police purposes on the great rivers, and the rest are stationed on the sea-coast. They are of all sizes, but none of them carry more than 20 guns. The larger ships carry from 200 to 400 soldiers and seamen; the total amount of the marine force is estimated at 60,000 men, on the peace establishment.

PRODUCTIVE INDUSTRY. — The industry of the Chinese in every thing which relates to the comforts and conveniences of life is wonderful. The origin of several of the arts is lost in the twilight of antiquity, and the invention of them is attributed to personages whose existence is very doubtful. They have from time immemorial, been acquainted with the preparation of silk, and the art of making the cloths which have attracted the merchants of the greater part of Asia. The manufacture of porcelain has been carried to a high degree of perfection, which the Europeans have but lately been able to surpass. The bamboo, besides being the grand instrument of punishment, serves as a material for numerous kinds of works. Their cotton cloths are famous over the world. Their furniture, their vessels, instruments and utensils of every kind are remarkable for great solidity joined to a certain ingenious simplicity, often deserving of imitation. They have always been acquainted with the art of working metals, they make musical instruments, cut and polish precious stones. Wood engraving and block printing are as old as the tenth century. They excel in embroidery, dyeing, varnishing, and cutting ivory. The fans which they make are everywhere admired; their works in filagree are beautiful; their artificial flowers have never been surpassed, and we owe to them the invention of tinted paper. Europeans have very imperfectly imitated some of the productions of their industry, such as their vivid and unalterable colours, their paper, which is at once fine and solid, their ink, and many other things which require patience, care, and dexterity. They take pleasure in reproducing models that reach them from foreign countries, which they copy with scrupulous exactness and slavish fidelity. They even make, expressly for Europeans, objects suited to their taste; and the rate of wages is so low, that it is often found advantageous to employ them upon works which European artists could only execute at a great expense. Nearly the whole arable land is constantly employed in producing human food. Even the steepest mountains are brought into cultivation; and are cut into terraces which resemble at a distance immense pyramids ascending by numerous steps or storeys. The waters which flow at the foot of the mountain are raised from terrace to terrace till they reach the very top by means of a portable chain-pump which may be worked by two men. Reservoirs are also formed on the tops of the mountains, from which the rain-water that is collected is let down for the irrigation of the sides. The houses of the peasantry are dispersed throughout the country, and not collected in villages. The women rear silk-worms; spin cotton, and weave it into cloth, which is in general use among the common people for both sexes; they also manufacture woollen stuffs. The Chinese use no butter nor cheese, and very little milk; their principal animal food is pork; they have few horses for travelling, show, or war; the only cattle which they keep are such as are required in husbandry; even sheep are very rarely to be seen, except in mountainous districts where the plough cannot be used with advantage. Hence there are no grazing farms, no meadows, and very little pasture, while every acre of ground capable of cultivation is turned up by the spade or the plough, and converted into a rice or a corn field. Wheel carriages are rare, particularly in the south, where the roads are few and narrow, and consist generally of raised pathways through the rice fields, or of winding lanes over the mountains. The gardens are very few; a Chinese grandee delights more in artificial landscapes, laid out in a small compass, than in an extensive park, or a flower garden. Utility is every where studied in preference to pleasure.

PUBLIC WORKS. — The Great Wall begins with a large bulwark and fort on the shore of the Yellow Sea, from which it extends westward, along the borders of Peche-lee, Shan-si, and Shen-si, through a space of 1500 miles, and ends amidst nearly impassable rocks and extensive deserts. It consists of an embankment of earth, raised upon a foundation of large square stones, and cased with stones or bricks; it is generally broad enough at top for six horsemen to pass abreast. Its height varies according to its situation; in the valleys and plains it is not less than 30 feet; and in such places it is strengthened by projecting square towers, at the distance of a bow-shot from each other. There are gates at intervals, which are strongly fortified and garrisoned. This great work appears to have been completed in the third century, and was intended as a defence against the Tartars, but a great part of it is now falling to ruins. The *Yun-ho*, *Yu-ho*, or Great Canal, commences near Lin-chin, in

Shan-tung, extends across Shan-tung, and Kiang-nan, and ends at Hang-chou-fou in Che-kiang, after a course of 700 miles. In some places it is raised above the level of the country, where strong dikes prevent its waters from overflowing; in other places it has been dug to the depth of 60 or 70 feet below the surface; and throughout it has a width of 200 feet. There are no locks, but only floodgates, and in hilly tracts inclined planes interrupt and regulate the current of its waters. In every part of its course it passes through alluvial soil, which is intersected by numerous streams; the sluices are of the rudest construction. It is neither carried through any mountain nor over any valley; it is nevertheless a work of high national utility, and forms the great channel of communication between the northern and the southern provinces. By means of the Pei-ho and Eu-ho rivers in Pe-che-lee, the Canal, the Yang-tse-kiang, the Poyang-hou, and the Kan-kiang in Kiang-si, and the Pe-kiang in Quang-tong, there is a navigable communication between Peking and Canton, interrupted only in one place by the high mountains which separate Quang-si and Quang-tong from Kiang-si. Across the mountains the communication is formed by the pass of Meilan, cut through the top of the ridge, a work esteemed so difficult that the Mandarin who accomplished it, was honoured with a statue in one of the neighbouring temples. The Chinese are obliged, by the circumstances of their country, to pay great attention to the draining and irrigating of their lands. Especial care has therefore been taken to prevent inundations; and the labour and expense bestowed on this department is scarcely equalled in any other country. Some of their embankments are strong and well constructed; their bridges over rapid streams and broad estuaries, are constructed of solid granite, and bear testimony to the skill and perseverance of their engineers.

COMMERCE. — The internal commerce of China is much more important than the foreign; it is carried on by means of the rivers and canals, and consists principally in the interchange of the natural and artificial productions of the different provinces. The country is so extensive, and embraces such a variety in its products, that the inland traffic is sufficient to occupy a very numerous portion of the people; and this circumstance has contributed to make the Chinese neglect their maritime commerce, which once extended so far as the Red Sea. Their merchants, however, still visit the principal ports of the Eastern Seas. Their foreign commerce may be distinguished into the maritime and the inland. The former is the more considerable, and its principal mart is at Canton, which is frequented by the maritime nations of Europe and by the Anglo-Americans. The Government, not content with limiting the places where European traders are to be admitted, the place of their abode, and the time during which they may remain at Canton, has also restricted their dealings to certain Chinese merchants, whom the French call *Hanistes*, and the English *Hong*, whose number till 1792 was only twelve, but has since been raised to eighteen. All commercial operations are managed through their intervention; and they are sometimes obliged to act as a sort of political agents in settling the disputes which often happen between the foreigners and the local authorities. The great article of export from Canton is tea, which is brought there by land carriage from the most remote tea-districts. The British part of this commerce was long monopolized by the English East-India Company; but since the abolition of their monopoly, the export of tea has increased immensely. The maritime trading towns next in importance are Hang-chew-foo, Hiamun or Amoy, Chao-ching, and Ning-po. The Spaniards of Manilla have the exclusive right of trading at Hang-chew-foo, in Fokien; Shanghai, in Kiang-nan, is the emporium of the trade with Japan. The land foreign commerce is carried on at five principal stations on the frontiers of Siberia; at Yarkhand and Aksou on the frontiers of Turkestan; at Leh and other places in Thibet; at Young-chang-fou on the frontiers of Birmah; and at Kuei-lin-fou on the frontiers of Annam. The principal articles of export, besides tea, are Nanking cloth, porcelain, rhubarb, squine, musk, ginger, badiane, mercury, zinc, borax, silk, shawls, mother-of-pearl, tortoise-shell, and other articles mentioned in the preceding section. The principal imports are, cloths and other woollen stuffs, furs from Siberia and North America, gold and silver wire, purl, and mats, glass and mirrors from Bohemia, lead, coral, cochineal, Prussian blue, cobalt, champagne wine, clocks and watches, ebony, gunpowder, sandalwood, calambac, ivory, tin, copper, birds' nests, incense, mother-of-pearl, camphor, tobacco, opium, and various other articles. The opium trade is contraband; but forms nevertheless the most valuable article of import. This drug is smoked by all classes to an enormous extent. In 1836 so many as 26,018 chests were imported into the country, valued at 17,106,903 dollars. The value of edible

birds' nests imported from the Indian Islands has been estimated to exceed £300,000 sterling annually.

DIVISIONS. — China is divided into eighteen provinces, which are subdivided into *foo*, *chew*, and *heen*; and it is a remarkable fact, that the Chinese cities have no proper names, but are all distinguished by the names of the *foo*, *chew*, or *heen* of which they are the capitals. Canton, for instance, is named Quang-chou-foo, *i. e.* the capital of Quang-tong; Nan-king is named Kiang-nan-foo, *i. e.* the capital of Kiang-nan; the capital of the empire itself, the residence of the Imperial Court, has no other name than King-szu, *i. e.* the capital, or Chun-thian-foo, the capital of Chun-thian. In consequence of there having been in China, occasionally, several simultaneous kingdoms, or, from the circumstance of the Court having several times changed its residence, the different capitals have received names indicative of their position: *Pe-king*, the north court; *Nan-king*, the south court; *Tung-king*, the east court.

TABLE of the Extent and Population of the Provinces of China, with the Principal Towns.

Provinces.	*Area in sq. miles*	*Population.*	*Relative Population.*	*Towns.*
Pe-che-lee,	58,949	27,990,874	474	PE-KING, Tong-chew-foo, Tien-sing-foo.
Shan-tung,	65 104	28,958,765	445	Tsi-nan-foo, Tong-chew-foo, Hong-chew-foo.
Shan-si,	55,268	14,004,210	253	Tai-yuen-foo.
Kiang-nan, { Kiang-su, / Gan-hwy, }	92,961	{ 37,843,501 / 34,168,059 }	774	Kiang-nan-foo (NAN-KING), Soo-chew-foo. Gan-khing.
Che-kiang,	39,150	26,256,784	671	Hang-chew-foo, Ning-po-foo.
Kiang-si,	72,176	30,426,999	422	Nan-chang-foo, King-te-ching.
Hou-an,	65,104	23,037,171	354	Honan-foo.
Hou-quang, { Houpee, / Hounan. }	144,770	{ 27,370,098 / 18,652,507 }	318	Wou-chang-foo. Chang-cha-foo.
Fokien,	53,480	14,777,410	276	Foo-chew-foo, Amoy, Chin-chew.
Quang-tung,	79,456	19,174,030	242	Quang-chew-foo (CANTON), Macao.
Quang-si,	78,250	7,313,895	93	Kwei-lin-foo.
Yun-nan,	107,969	5,561,320	51	Yun-nan-foo.
Kwei-chew,	60,554	5,288,219	87	Kwei-yang-foo.
Setchuen,	166,800	21,435,678	128	Ching-too-foo.
Shen-si, / Kan-suh,	154,008	{ 10,207,256 / 15,193,125 }	165	Si-ngan-foo. Lan-chew-foo.
Total,	1,297,999	367,659,901	283	PEKING.

These names are spelled in various other ways: it is always difficult, and sometimes impossible to express oriental names by Roman letters, and therefore each European nation spells them differently

§ *Cities, Towns, and Remarkable Places.*

PE-KING (North-Court), the capital of the empire, in the province of Pe-che-lee, about 26 miles only from the great wall, in lat. 39° 42′ 15″ N. long., 116° 30′ E., stands in a sandy plain, destitute of vegetation, and bounded on the west by a chain of high hills from which issue several streams that water the country. It is about 20 miles in circumference, is surrounded with high castellated walls of blue brick, outside of which there is a wet ditch. It is composed of two cities which are quite distinct; the one called King-tshing (Imperial town), called also the Tartar city, because it was built by the Tartars or Mongols during their possession of China in the 13th century, and is now inhabited principally by the Mandchews; the other named Lao-tshing (old town), or Wai-lo-tshing, called also the Chinese town, because it is principally inhabited by Chinese. Some of the gates are lofty and strong, and surmounted with lofty towers, which give them, at a distance, the appearance of grandeur. The streets are generally broad, and in straight lines; the largest is 60 yards wide, and nearly 3 miles in length, from east to west. They are unpaved, but clean and well kept. The houses are low, often one storey, and are built of brick, and tiled. The shops are handsomely ornamented, and the brilliancy and variety of the goods exposed for sale give them a gay appearance. The finest buildings are the temples, which are spacious and magnificent, adorned with columns, and stairs of white marble. The streets and houses of the Chinese town are very inferior in appearance to those of the Tartar city. There are, besides, 12 large suburbs, without the walls, each extending about two miles in length. The population of Peking is variously estimated at between 600,000 and 3,000,000; the city probably contains about 2,000,000. The Tartar city is composed of three towns within each other, each surrounded with its own wall. The innermost is the Tsu-kin-ching, or Imperial palace, about two miles in circumference, of a square form, surrounded with strong walls, 30 feet high, built of brick, and covered with yellow tiles. It is composed of numerous buildings, containing halls, temples, &c., and the imperial garden. The second enclosure, called Whang-ching, contains numerous large gardens, with artificial lakes, and hills, temples, and halls, and is principally inhabited by people in the service of the court. Peking is distinguished from the other capitals and great cities of Asia by a number of public institutions, resembling those of Europe, notwithstanding the great differences interposed by Chinese habits, manners, and customs. It receives its supplies from the southern provinces, by means of the great canal and the rivers of Pe-che-lee, which form the channels of a very active commerce.

In the neighbourhood of the city is the imperial summer palace, called *Yuen-min-yuen*, the round and shining garden. The palace is very large, being composed of a great number of buildings, disposed with beautiful symmetry, and separated by courts, gardens, and parterres. The face of each glitters with gold, varnish, and painting, and the emperor's apartments are adorned with the most valuable productions of China, Japan, and the Indies, and even with masterpieces of several European arts. The gardens contain about 60,000 acres, diversified with artificial hills, lakes, canals, vallies, rocks,

and islands; which are occupied by arbours, forests, pavilions, and everything most agreeable to the sight. A hundred and twenty miles to the N.E. of Peking, and beyond the great wall, is *Zehol*, a hunting-seat of the emperor, where Kien-long received the British embassy in 1793.

NAN-KING or Kiang-nan-foo, stands on a branch of the Yang-tse-kiang, in the province of Kiang-nan, 570 miles S. by E. of Peking. The area enclosed by the walls is much larger than that of Peking, but the greater part of it is now destitute of even the traces of buildings, and the city occupies only a corner of the enclosure. Reduced, however, as it is, it still continues to be one of the principal manufacturing towns of the empire. Its silks, paper, and cotton cloths, are preferred to those made any where else; and even in Europe the cottons were once highly esteemed, and have given their name to a species of imitation cloth called *nankeen*. Learning also continues to flourish, the booksellers' shops are amply furnished, and more physicians are sent from Nanking than from any other city of the empire. Its principal or most celebrated building is a pagoda, or octagonal tower of 9 storeys, ascended by 884 steps. The material is a fine white tile, which, being painted in various colours, has the appearance of porcelain; and all the parts are so neatly joined as to appear to form only one piece. The galleries are filled with images, and set round with bells, which tinkle with the wind; and on the top is a large pine-apple-shaped ornament, consisting, as the Chinese say, of solid gold. About 40 miles E. by N. of Nanking, in the bed of the Yang-tse-kiang, is the island of *Chin-shen* (Golden island), which rises almost perpendicularly from the river, and is covered with gardens and pleasure houses. "Art and nature," says Sir G. Staunton, "seem to have combined to give to this spot the appearance of enchantment." It belongs to the emperor, who has built upon it a large and handsome palace, and on the highest point are several temples and pagodas. It also contains a large monastery of priests, who are its principal inhabitants. In this part of the great river, which is here two miles wide, are numerous islands skirted with shrubbery, and rocks which rise abruptly from the water; the waves roll like those of the ocean, and porpoises are said to be sometimes seen rolling among them. Chin-shan stands nearly in the middle of the stream.

Sou-chew-foo, a very large city, and one of the most flourishing commercial places in the empire, stands on the east bank of the great canal, 104 miles E.S.E. of Nanking, in the province of Kiang-si; and is extolled as a terrestrial paradise. It is traversed by numerous canals, which render it, like Venice, a city on the waters; it contains a multitude of magnificent bridges, temples, and triumphal arches, and it is here that all the classes of people, whose business it is to minister to pleasure, lawful or unlawful, are trained to their respective callings. A few miles west of the city, the Tai-hoo (Great lake), nearly 100 miles in circumference, and bordered by picturesque hills, which are cultivated to their very tops, is a place of great resort and recreation to the citizens, who take their pleasure in numerous boats, rowed chiefly by women. *Ching-kiang-foo*, in the same province, on the south bank of the Yang-tse-kiang, at the place where it is crossed by the canal, is one of the maritime keys of the empire, and is defended by a very strong garrison. *Shang-hai*, *Seang-hae*, or *Shang-hae-heen*, 60 miles E. by S. of Sou-chew-fou, has a fine harbour at the mouth of the Woosung river. The entrance, however, leads over an extensive bar, so that only ships drawing not more than 14 feet water can reach the city, which is in lat. 31° 9′ N., long. 121° 4′ E. This is, perhaps, the largest emporium of the empire, and carries on an extensive trade, equal in amount, at least, if not superior, to that of Canton.

Hang-chew-foo, the capital of Che-kiang, is the emporium of trade between the northern and the southern provinces. It is the famous *Kinsai* of Marco Polo, the capital in his time of southern China; and is 90 miles to the S. of Sou-chew-foo. The whole intervening space is a rich and beautiful country, containing in many places extensive forests of mulberry trees, which afford abundant food for the silkworms. Hang-chew-foo is situate between the basin of the great canal which ends here, and the river Chen-tang-chaung, which falls into the sea, at the distance of 60 miles east. The tide when full increases the width of the river to about four miles opposite the city; and renders it the channel by which great quantities of merchandise are received and exported to and from the southern provinces. But there is no water communication between the river and the canal, so that all goods arriving either way must be landed at the city. The population is very large. *Ning-po-foo*, in lat. 29° 33 12″ N., long. 121° 17′ E., is a very beautiful town, with an extensive trade in raw silks, silk piece-goods, and green teas. It stands upon a creek, and, till the middle of last century, contained an English factory. Large vessels can proceed only so far as *Chin-hae*, at the entrance of the river, but ships of 300 tons may anchor before the city, which is about 12 or 15 miles from the sea. *Sikpo* (Shlp-po), south of Ning-po, has an excellent land-locked harbour; and Cha-po (Cha-poo), about 70 miles N., is the Chinese emporium for Japan.

In the province of Fokien are: *Hok-chew* or *Fou-chew-foo*, the capital, 10 miles from the mouth of the river Si-ho or Min-kiang, which is broad and navigable up to the city. The entrance of the river is in lat. 26° 6′ N., long. 119° 55′ E., and is rather intricate. Numerous villages and hamlets occupy beautiful situations on its banks; while fertile fields, producing wheat, naked rocks, cascades, islands, and plains of sand give a diversified aspect to the scene. The city is one of the largest and most populous in China, and is distinguished for its commerce and the industry of its inhabitants, as well as for the number of literati who make it their residence. It is also remarkable for a great stone bridge, a rude but substantial structure, built quite across the broad river. *Amoy* or *Emoei* (*Hea-mun*), in lat. 24° 27′ 26″ N., long. 118° 10′ 30″ E., is situate on an island, with an excellent harbour which admits ships of the greatest burden. It carries on a very extensive trade with the Indian Archipelago, Formosa, and all the maritime provinces of China. The city is very extensive, and contains at least 200,000 inhabitants. Vessels can sail up close to the houses, load and unload with the greatest facility, have shelter from all winds, and in entering or leaving the port are in no danger of getting on shore. *Chin-chew* (Tseuen-choo), 50 miles N.E. of Amoy, a seaport town on a small river, with a bay obstructed by shoals and banks, so that only small brigs can proceed to the city.

CANTON or *Quang-chou-foo*, called also by the natives *Sang-ching*, is situate in lat. 23° 7′ 10″ N., long. 113° 14′ 30″ E., on the Choo or Si-kiang (Pearl river), 100 miles from the sea, and surrounded by canals, branches of rivers, rice fields, and towering barren hills. It is a very ancient city, but is important now as the sole emporium of the European and American commerce with China. The city is of a square form, surrounded with walls built of stone and brick, with a line of battlements and embrasures, and pierced with sixteen gates. It is divided by a wall into two parts, called the old city and the new city, the whole circumference of which can be walked round at a quick pace within two hours; but the suburbs are fully as large as the city itself. The European factories are outside the walls on the banks of the river, and are thirteen in number. They are, without doubt, says Gutslaff, the most elegant buildings in the empire, though a European might find fault with them, and view the factory comforts with contempt. There are about 600 streets in Canton, most of which are narrow and crooked, and none at all to be compared with the old and new China streets near the factories. Few of the houses are splendid; the dwellings of the poor are exceedingly crowded; and, even in the houses of the wealthy, if we except those of a few Hong merchants, there is no real comfort. The governor's palace, a very spacious building, stands near the Yew-lan gate. The other public buildings and the temples are very numerous. The population has been variously estimated between 75,000 and 1,500,000. Many thousands of the people live continually on the water, in a sort of floating houses ranged in lines like streets. The foreign trade is transacted by means of a certain number of merchants called Hong; and the imperial officers, to whom communications are made through the

Hong, are the Tsung-tuh, governor of the two Quang provinces, who generally resides at Canton, though his proper official seat is at Shaou-king-foo, about 100 miles to the westward; the Foo-yuen, or Lieutenant-governor; the Hae-kwan-keen-tuh or Hoppo, the collector of the customs, who has the entire direction of foreign trade. All matters, however, of importance are communicated to the Tung-tuh, who reports to the Emperor what is worthy of his attention. The European and American ships anchor at *Whampoa* (Hwang-poo), a small and wretched village on an island about 14 miles down the river. Each ship on its arrival engages a Hong merchant, who becomes surety for the good behaviour of the crew, and for the payment of the duties; and with him the greater part of the business is transacted. The custom-house officers are very numerous. All of them live by extortion, and are, without exception, venal. *Macao*, in Chinese *Aou-mun*, "the entrance to the bay," a Portuguese town, is situate on a small peninsula, nine miles in circumference, at the southern extremity of a large island (Heang-shan) formed by two branches of the river of Canton. It is a handsome well-built city; and the population is estimated at between 12,000 and 30,000. The Chinese government interdicts all communication from Macao with the neighbouring country, and a wall is built across the isthmus and closely guarded, which no European is allowed to pass. The peninsula is rocky; the cliffs are of various picturesque forms, presenting fine views of both sea and land. A garden and a cave are still pointed out as the haunt of Camoens, the author of the Lusiad. The foreign merchants leave their families here, while they can proceed to Canton only for the purposes of trade. Macao is near the sea, just within the entrance of the great western channel of the river or gulf of Canton. It had an excellent harbour, but the depth of the entrance has decreased to two fathoms, and large ships are therefore obliged to lie in the roads, which are much exposed. The *Bocca-Tigris*, or proper mouth of the river, lies to the north of Macao road, about 50 miles by the navigable channel of the gulf.

Nan-tchang-foo, the capital of Kiang-si, upon the Kan-kiang, a very large town, is the centre of the porcelain manufactures. It has also a great trade in silks and furs; and produces an immense number of idols. *King-te-tshin*, on the Po, a large town to the east of the Poyang lake, is the largest porcelain manufactory in the world. It contains not fewer than 500 furnaces, and is said by the missionaries to have 1,000,000 of inhabitants. Its site is marked by the clouds of smoke by day, and pillars of fire by night, which give it the appearance at a distance of a great city on fire. No foreigner has ever been admitted within its precincts, lest he should make known the secrets of the processes there carried on. China contains many other large cities and towns, but these, however important to their natives and the imperial government, have never acquired a European fame, nor been visited by any other Europeans than a few Catholic missionaries. The kingdom is said to contain altogether 1572 towns, 2796 temples, 3158 bridges, 10,809 public buildings, 765 lakes, and 14,607 mountains; all specially enumerated and described by Chinese writers. Large and flourishing cities are found only where there is ready water communication with other places. The greatest sameness exists in all the towns. In the larger towns are a few well-paved streets, lined with shops; but most of the streets are very narrow, extremely dirty, and lined with mere hovels. The suburbs of many cities are much larger than the cities themselves, and it is not unusual to see a large walled space without houses, where there was formerly a city. Villages and hamlets have often a fine appearance at a distance; but internally they are only a mass of houses irregularly clustered together, without furniture or comforts, and filthy in the extreme. The grandeur of the natural scenery is often as striking as in many parts of the world. Commanding situations are chosen for temples, which serve likewise for taverns, stages, public halls, and gambling-houses. The building of houses is regulated by law, and none is allowed to exceed a certain size. The public buildings have little to recommend them.—(*Balbi's Abregé*, p. 771; *Sir G. Staunton's Account of Macartney's Embassy*; *Ellis's Account of Lord Amherst's Embassy*; *Gutzlaff's Voyages, China Opened, and History of China*; *Medhurst's China*; *Downing's Fanqui in China*; *Davis's China and the Chinese*; *Rev. Howard Malcom's Travels*; *Voyage of the Amherst*; &c. &c. &c.)

§ *Subject territories beyond China Proper.*

I. The western part of the province of Kan-suh, comprising *Barkol* and *Ouroumtsi*, with the country between these places and the ancient western limits of Shen-si.

II. *Thian-shan-pe-lou*, or the country to the north, and *Thian-shan-nan-lou*, the country to the south of the Celestial mountains, form together what the Chinese call *Tsin-kiang*, or the *New frontier*. They are both dependent on the military governor-general who resides at Ili or Ele, and have been, since 1760, a regular province of the empire. Thian-shan-pe-lou comprises, 1. *Soongaria* or *Zungaria*, subdivided into three military divisions, which bear the names of their chief towns, *Ili* or *Goulja*, *Kour-kara-oussou*, and *Tarbagatai*. 2. The country of the Kirghiz, which comprises a part of the territory of the Kirghiz of the Great Horde, who dwell around lake Balkashi, and a part of the country of the *Bûrût*, in the neighbourhood of Lake Zaisang. 3. The *Torgot* country, which comprises the territory along the upper Ili, assigned by the Emperor of China to the remains of the Torgots or Torguths, who, in 1770, migrated from the banks of the Volga to place themselves under his protection. Thian-shan-nan-lou or *Little Bukharia*, formerly divided into eight principalities, tributary to the empire, is now divided into ten districts which are entirely subject, and bear the names of their chief towns, namely, *Khamil* or *Hami*, *Pijan*, *Karashar*, *Koutshé*, *Sairam*, *Aksou*, *Oushi*, *Kashgar* or *Kashkar* or *Cashgar*, *Yarkhand*, and *Khoten* or *Khotan*. Aksou may be regarded as the capital of the country, as it is the residence of the commander-in-chief of all the troops in this division of the empire. It was in this province, and particularly in Cashgar and Yarkhand, that a few years ago the Turkish princes revolted, and carried on a desultory warfare against the Chinese.

III. The *country of the Mongols of Hoho-nor* or *Khokho-noor*, divided, according to Klaproth, into 30 banners. This race inhabit the very high mountainous country around the lake *Hoho-nor*, and are, properly speaking, Kalmucks. This region contains the sources of the Whang-ho, and its southern slope sends forth the Kin-cha-kiang, one of the principal branches of the Yang-tse-kiang, the Saluen, and the May-kuang or river of Cambodia, three of the largest rivers of Asia.

IV. *Thibet* or *Si-zzang*, subdivided into, 1. *Oui*, which contains *H'lassa* (Lassa), *Botala*, and *Jigagounggar*. 2. *Zzang*, which contains *Jikadze*, a town of 30,000 inhabitants, according to Klaproth; *Jashi-loumbo* (Teeshoo-lomboo,) the residence of the Bantshan-lama; *Ghiandze*; *Phari*, a small fortress not far from Mount Chumulari; *Chakakote*, a commercial town of 1000 houses near Dhwalagiri; *Bhaldi* or *Paltee*. 3. *K'ham*, which comprises *Bathang*, *Triamdo*, *Soumang* or *Sourmam*, *Souk*. It appears that the eastern part of this province has been united to the Chinese province of Setchuen. 4. *Ngari*, which comprises several small states tributary to the Dalai-lama. Their chief towns are *Choumarte*, *Bourang-dakla*, *Deba*, the capital of the *Undes* or *Urnadesa*, and the residence of a lama; *Toling*, the residence of a grand lama; *Ladakh* or Leh, the capital of Little Thibet; *Garlou* or *Gurtope*, a Chinese military post. The eastern part of this province is occupied by Mongol tribes named Khor or Charai-gol; and Ladakh is an independent kingdom or principality.

V. The *country of the Deb-Raja* or Bhotan and Bisni, both already described as being within the natural limits of India. They are dependent upon, but are not properly subject to China.

VI. *Mantchouria*, or the country of the Mandchews, divided into three departments or shires:

1. *Ching-king*, which comprises Ching-yang or Moukden, Foung-thian, the archipelago of Leao-ton
or of John Potocki; 2. *Kirin*, which comprises Kirin, Hedoune, Ningouta, Tondon, a place of exil
for Chinese criminals; 3. *Saghalien-oula*, comprising Saghalien-oula-hotun, Taltsikar, Kallar, an
the northern part of the island of Tarrakai or Tshoka or Seghalien.

VII. *Mongolia*, in which we must distinguish:—1. The *Country of the Mongols*, subdivided int
Kortsin, where are found the ruins of the towns Almatou and Sibe; *Tourbet*; *Jalait*, where are foun
Cholkoto; *Gorlos*, containing the ruined towns of Loung-ngan, *Ao-khoto*, and *Bar-khoto*; *Arou
Kortsin*; *Toumet*, containing the ruined town of Kara-khoto; *Karatsin*, containing the ruins o
several ancient cities, and the Buddhist temple of Kou-youan-ming-szu; *Aokhan*; *Naiman*; *Ouangni
out*, with the ruins of Jao-tsheou; *Khalka* (left wing); *Jarout*, where there is a celebrated temple o
Buddha-Sakyamouni; *Abakhai*; *Abakhanar*; *Khaokut*, where we find Barin-khoto and the tombs o
the Khitan emperors; *Kesikten*; *Sounioud*; *Dourbun-Koelsohn*; *Khalka* (right wing); *Toumet o
Koukou-khoto* (in Chinese, Kwei-wha-Ching), the residence of an incarnate god; *Ourat*, where w
must place the ancient country of Tenduc or Thian-te, mentioned by Marco Polo, and containin
several celebrated temples; *Ordos*; *Chakhar* or the Frontier Mongols, in the neighbourhood of Shan-si
the *Districts of the eight pasturages* belonging to the Chinese Government, where was situate the town
of Chao-naircan-soume, formerly called Kai-phing, which, according to Klaproth, is the Clemenfo
of Marco Polo, the summer residence of the Mongol khans of the dynasty of Tuan. 2. The *Country
of the Khalka*, which comprises the ancient country of the Khalka, a part of the desert of Gobi, th
country of the *Ourianghai*, and a portion of that of the *Eleuths* or *Oelet*. Its principal towns are
Ourga or *Kuren*, *Mai-tmat-tchin*, *Oula-soutai*, the residence of a Mandchew general, commander-in
chief of the troops in this province. Several hordes of Kalmucks wander in this elevated region. I
Ourianghai live the Soyotes, who sometimes indulge in cannibalism. According to Klaproth, it is i
this part of the empire that we must place *Karakhorin* or *Karakorum* or *Caracorum*, the ordinary resi
dence of the first successors of Zenghis Khan, and consequently the capital of the largest empire tha
ever existed. It was there that Kublai and Argoun received the ambassadors of all the princes of Asia
and of several from Europe and America.

VIII. The *Kingdom of Corea*.

These eight provinces comprise an immense extent of country of very diversified surface, an
possessing different climates and natural productions.

MONGOLIA is an elevated valley or table-land inclosed between the Altai mountains and those o
Thibet, and intersected by chains of lofty granite mountains, the summits of which are in many part
clothed with a variety of trees. Numerous rivers, abounding in fish, flow at the foot of these ridges
and pasturages and cultivated fields interrupt, at intervals, the monotony of the sandy and stony so
of which the greater part of the country consists. The desert of Gobi is intersected from east t
west by mountains less elevated than those to the north. Notwithstanding the scarcity of water an
pasture it is almost everywhere covered with flocks of sheep and goats, herds of large camels, vigo
rous though small horses, and oxen, undisturbed by insects or reptiles. The yellow sand, whic
forms the surface of the desert, is generally not loose and moveable; and water is found in wel
from seven to ten feet in depth. To the northward, however, of Hoho-nor it assumes a most terrifi
appearance, being there covered with semi-transparent shingles, which reflect the sun's rays and ren
der the summer heat so intense that not even a blade of grass can grow among them. The arid so
ends at the southern limit of the Gobi. The country of the Tsakhars, of the Ordos, and of severa
Mongolian hordes, who live to the south of the steppe, is adapted for tillage, and sufficiently wel
watered. Nearer to the great wall of China, the districts of the Eastern Mongols form a fertile coun
try. The climate is very different from that of the countries of Europe situate in the same latitud
(between 40 and 50 N.). The great elevation of the country, and an abundance of natron are probably
the most active causes in producing the greater degree of cold which is experienced in Mongolia.
In October and November 1820, the Russian embassy found Reaumur's thermometer to vary between
10° and 18° below zero, = between − 9° and − 9° of Fahrenheit; but cold as the climate is in winter
it is, on the contrary, in summer almost as hot and parching as in Arabia. The pines, fir, birch, ash
elm, and white poplar, grow on the mountains of Northern Mongolia, and in the same region are
found red currants, wild peaches, and various shrubs. Besides the domestic animals already men-
tioned, there are numbers of wild horses, boars, goats, bears, wolves, hares, foxes, sables, and squir-
rels; with cranes, wild geese, ducks, moorfowl, quails, and swans. The Mongols being obliged by
their pastoral habits frequently to change their places of abode, have to content themselves with a
little wheat, millet, and barley, of their own sowing, and to depend for the greater part of their sub-
sistence on the produce of their flocks and herds, and the corn which they receive from China in
exchange for their sheep and other animals. Their improvidence in regard to bread exposes them
sometimes to absolute want in winter, when their flocks like wise suffer from extreme cold, or disease.
They are naturally warlike, and have not lost the remembrance of the victories of their ancestors
over the Chinese; the name of Zenghis Khan is still in high repute among them, and they still point
out his several places of residence. But the long peace which they have enjoyed since they became
subject to China, in the latter half of the 17th century, has rendered them more strikingly remarkable
for simplicity of character, frankness, kindness, and hospitality, than for traits of a martial spirit.
Yet they still are fond of horse-racing, wrestling, and archery. In religion they are Buddhists, and
have among them a great many *lamaes* (spiritual mothers), and no less than ten of that superior order
styled *Kutukhtu*. The Mongolians worship one supreme God, but regard the Kutukhtus as his vice-
gerents, who, they believe, know the past, the present, and the future, have the power to remit sins,
and do not die, their soul only migrating to another body. The Dalai-lama of Thibet is the superior
of the Kutukhtus, and the supreme head of the religion, and used to point out the child into whose
body the soul of the deceased Kutukhtu had migrated; but that privilege is now reserved to the
emperor himself. The lamaic religion contributes to soften their manners; crimes are seldom com-
mitted; and, when they do occur, are always severely punished. Though they have neither artists
nor manufacturers, and depend on China for their supply of manufactured goods, they dress them-
selves carefully and expensively; and their tents usually contain a variety of furniture and conve-
niences, besides altars and idols. They live principally on milk, butter, and cheese, and only in case
of great necessity eat the flesh of the camel or horse. They drink koumiss, a fermented liquor made
from mare's milk. They beguile their idle hours with songs, which are very flattering to their ancestors,
and betray a secret dislike to their Mandchew rulers. Polygamy prevails among them, and divorces
are frequent. Their trade is almost entirely with China, with which country they exchange sheep,
cattle, and silver bars for manufactured goods and tea. The country is divided into several princi-
palities, which are independent of each other, but all recognise the supremacy of China; and though
the Chinese politicians trust to this division of power for the maintenance of their authority, yet, for
greater security, they have placed Mongolia under military rule. All the hordes are divided into
bands, regiments, and squadrons; the officers of which are invested with both military and civil
powers; and over them inspectors are appointed by the emperor. Every three years the chiefs of the
principalities hold a general diet. The dignity of prince is hereditary in the eldest son alone, the
younger sons falling into the class of poor nobility. Each prince pays the emperor a tribute of cattle,
as an acknowledgment of his supremacy, but receives in return presents of much greater value; and
not seldom an imperial princess for a wife. The supreme administration of Mongolia is vested in

the board or tribunal of foreign affairs at Peking.—*(Travels of the Russian Mission through Mongolia to China, &c., in 1820-1, by George Timkowski.* London, 1827.) The *Khalkas*, or black Mongols, are described by Gerbillon as being, next to the Hottentots, the dirtiest and ugliest race he ever saw. They possess the north-eastern deserts to the south and south-east of the Baikal. The *Kalmucks*, who possess the western part of Mongolia, Thian-shan-pe-lou or Soongaria, and the western part of Kan-suh, do not differ materially from the Mongols. They call themselves *Derben Oerot*—the four brothers, or allies; and are divided into four nations, called *Choshotes* or *Eleuths* (called *Sifans* by the Chinese), who live in the vicinity of lake Hoho-nor; *Soongares*, who give their name (Soongaria) to the country they inhabit; the *Torgotes* or *Torguths*, already mentioned; and the *Derbetes*, some of whom have joined the Torgotes, and others have attached themselves to the Soongarians. The Kalmucks live in tents or cabins of hurdles, and are quite nomadic in their habits. The few towns in their country are inhabited principally by Bukharians and Chinese. They have three distinct classes of society; the nobility, or "white bones;" the common people, or "black bones," who are slaves; and the *lamas* or clergy, who are sprung from both, and are freemen. The internal concerns of the tribes are managed independently by their princes, who sometimes used to combine for common objects, and elected a contaysha, or king, to direct the general concerns. In religion they are followers of the Dalai-lama, and are in complete subjection to the dominion of their priests, to whom they commit the direction of all their affairs; and nothing is done without consulting a gylong (or gellong) who pretends to interrogate the gods by sorcery. The priests live in luxury; they are enjoined to celibacy, but the purity of their life is somewhat questionable. *Goulja*, the chief place in Soongaria, is a large town of 10,000 houses; it stands on the river Ili, and is the entrepot of the commerce of central Asia with its western and eastern regions. *Ourga* or *Kusen*, south of Lake Baikal, contains 70,000 inhabitants.

LITTLE BUKHARIA, or THIAN-SHAN-NAN-LOU, forms a wide plain, extending eastward from the Belur-tagh, and is watered by numerous streams, which find their way to the Loknor (lake of Lop), or are lost in the desert. *Cashgar* is the most westerly portion, and appears to be flourishing under Chinese sway; the fields, being carefully cultivated, produce large crops of grain, and the fruits are of peculiar excellence. Its chief town, which bears the same name, was once the capital of a kingdom; and is still a large and flourishing city, with nearly 50,000 inhabitants. *Yarkhand* or *Ierkhand*, not far to the south-east, is a somewhat larger city; and stands in a fertile plain, rich in fruit and grain, bordered by hills on all sides except the east, in which direction its river flows. Its climate is dry and agreeable; snow seldom falls, and even rain is rare. *Eela*, another city, whose situation seems not exactly known, is said to have 75,000 inhabitants. *Khoten*, once the capital of an independent kingdom, of considerable extent and power, lies south-east of Yarkhand, but very little is known of the country. The inhabitants are Mahometan Turks, who are allowed to conduct their own government, while the Chinese collect the revenues and guard the frontiers. People entering the country for the purposes of trade, from Bokhara and Thibet, are not allowed to proceed farther than Yarkhand; and, as they enter the Chinese dominions, are placed under the charge of certain persons who are responsible for their behaviour. The frontier is guarded by a chain of military posts, at which every package brought by the caravans is carefully examined; and permission is then given to proceed to Cashgar and Yarkhand, where duties of no very oppressive amount are exacted. So thoroughly organized is this system of police, that it is said to be impossible to elude its vigilance. A native who was suspected in these countries, and was afterwards in the service of Captain Burnes, remained in confinement for three months, and was at length dismissed by the road he had come, after a likeness of him had been taken. Several copies of the picture were dispatched to the frontier towns, with these instructions:—"If this man enters the country, his head is the emperor's, his property is yours." "I need not add," says Captain Burnes, "that he has never since sought to extend his acquaintance in the Chinese province of Yarkhand."—*(Burnes' Travels*, II. 233.)

MANTCHOURIA, or the country of the Mandchews, and COREA (V. and VI.) form together one geographical region, and occupy the wide extent of country which lies along the eastern coast of Asia, between China and Siberia. Their northern border is a part of the Altai range of mountains; another range called *Seih-hih-tih*, forms the coast extending from the mouth of the Amoor to the southern extremity of Corea, and constitutes the nucleus or skeleton of that peninsula; while a third range, stretching in a direction from north to south-west, divides Mantchouria from Mongolia; and between these two cross ranges there appears to be a mountain ridge, or high land at least, which divides the basin of the Amoor and its affluents from the waters that flow southward to the Yellow Sea. The greater part of Mantchouria is occupied by the basin of the Amoor and its affluents. This great river is formed at Baklanova, on the Russian frontier, by the confluence of the *Anon* or *Onon*, called also *Chilka*, and the *Argun* from the west. It then makes a long circuit through Daouria, and enters the sea in lat 53° N., after receiving from southern Mantchouria the waters of the *Songari-ula*, and the *Usuri* or *Unuli*, with various other streams. Deep and still it presents no impediment to navigation; it has neither rocks nor shallows; its banks are lined with magnificent forests, and it is admirably suited as the outlet of the produce of south-eastern Siberia; but the jealous policy of the Chinese prevents its being used for purposes of commerce. The northern part of Mantchouria is the original seat of the present imperial family, who conquered China in 1640. It appears to be diversified by rugged mountains, covered with thick forests, and separated by valleys of considerable fertility. Wheat is raised only in the most favoured spots; oats being the general object of cultivation. The most valuable product, however, is ginseng, the universal medicine in the estimation of the Chinese, who boast that it would render man immortal were it possible for him to be so. It grows upon the mountain sides. The shores along the ocean are covered with magnificent forests, but are in a state of nature. Its few inhabitants, named *Keyakur* and *Feyak*, do not even hold any intercourse with the interior, but live entirely independent, subsisting by fishing; and, though very poor and uncivilized, they appear to be mild and well disposed. The Mandchews are somewhat civilized; they possess even a spoken and written language essentially different from that of the Chinese, or any other nation of central Asia, and have many radical sounds which bear a close affinity to those of the languages of Europe. They belong to the Tongoose race, and are divided into several tribes, differing slightly in the degree of civilization. They are more robust in their figure, but have less expressive countenances than the Chinese, and their women have not their feet cramped and distorted. The *Daourians* or *Ducheri*, who possess a large portion of the banks of the Amoor (called from them Daouria), consist of Mandchews mixed with Mongols. The Mandchews generally appear to be a rude, half-civilized people; and their conquest of China has greatly injured their native country, as the leading families, and ambitious individuals have naturally followed the court. They have neither temples nor idols, but worship one supreme being, whom they style the emperor of heaven; yet their religion appears to have some affinity with Shamanism. Mantchouria is divided into three provinces:—1. *Chin-king, Moukden* or *Leao-tong*; 2. *Kirin*; and, 3. *Chichikar* or *Tsitsikar*. *Leao-tong* lies round a gulf of the Yellow Sea, and is separated from Corea by considerable ranges of hills, the most celebrated of which is the *Chang-pih-sang*, or long-white mountain. A part of the country produces abundance of wheat, peas, and rhubarb, the staple articles of export to China; but the soil is mostly poor, the harvests frequently fail, and famines are not uncommon. Hemp is the plant which best repays the cultivator; it reaches the height of seven or eight feet, and sometimes more. Potatoes have also been recently introduced from Russia, and thrive very well, yielding a good produce. The climate is very cold; the sum-

the ... the winters are long and dismal. The cold sets in during Oct ... the ... of March. The changes from heat to cold are so ... it ... the thermometer falls from 4° to ... and a fine autumnal afternoon is ... cultivated ... and yet the vine, the chestnut and the walnut thrive. T ... Manchows, who are here an indolent, poor, proud, and contemp ... Ching-tung, in N. lat. 41° 56', and 7° 11' E. of Pe ... influence and expended much money in endeavouring ... though the inner town contains ... manufactures, those in the outer city are mere huts. *Ka* ... situate on a shallow river about 5 miles from the s ... *Tsiang-tu* or *King-tcheou*, is also a large emp ... and the trade is so brisk that more th ... situate in N. lat. 42° 0', on the N.W. side of the g ... to the coast from Corea to the Amoor, is a dreary ... and the winter lasts for seve ... N. lat. 47° 40', is a paltry place, surrounded by a mud-w ... the vicinity it is deemed a sacred spot, and ... The only other places worthy of notic ... *Ko-ye-ri*, 45 leagues N.W. of Kirin; and ... called also *Saghalien-oula*, includes ... the climate and productions are much th ... the capital, in N. lat. 47° 20', is surrounded with ... are most civil to merchants. *Sagh* ... the island of *Saghalien*, ca ... by its native name, extends 590 miles from N. ... separated by the narrow channel of Tartary. ... but they are hospitable, and car ... They are tributary to the Mandchews, who call th ...

... to the northern and southern extremiti ... It lies between the Yellow Sea on the west, ... of which the principal feature in the physical geography is the existence ... chain of mountains which stretches through it at a short distance from the east coast. T ... the country towards the Yellow Sea: the eastern coa ... by innumerable islands, which were first discove ... Though in the latitude of Italy, Corea is sai ... cultivated. The mountains of the northern ... growing. The southern provinces ... from which a various liquor is made; and also in hem ... face with an agreeable physiognomy, and ve ... and the language of China have been introduced among th ... state and make use of the Chinese language and chara ... and has an alphabet of its own. Their religion i ... The country forms a separate kingdom, whose ruler ... nevertheless, a vassal of China, and sends annual presen ... was formerly defended from the Manichews by a gr ... which it is said is now, like that of China, falling to ... Corea ... appearance as those of China; but the house ... Ang-ching, nearly in the centre of the penin ...

... is a region of table-lands, deep valleys, and high ... separated by the Himalayas; China a ... Little Bukharia on the north; and the ... It has commonly called Little Thibet, on the w ... The native name is *Pout* or *Bout*, ... Bodha's country. The physical struc ... already described in our general g ... Asia ... to the valley of the Sanp ... the Himalayas, near the sources of the Ganges and Suttlej ... a long ... miles in length, carrying with it all the surplus wat ... part ... certainly known. Kiaq'roth believes it to be ide ... the Irawady; but it ... appears its waters into the Brahmapoota: and the recen ... Assam seem ... With respect to climate and natural produc ... *See ante*, p. 625. The people ... and ... and possessing but little of the Mongolian features, ... a mixture of Ind. Religion is the basis of both the ... and their social system ... a variety of Buddhism, and the clergy are the political rulers. ... the private ... of the whole country. Every district has its lama, or bishop; the ch ... spiritual ... sovereign is the Grand or Dalai-lama, who resides at Lassa. Next to him is t ... lama, who resides at Tesh ... These are both incarnations of the deity, which ... cessively by transmigration from one body to another. The priests form the aristocr ... country, they reside in communities in large ... which unite the characters of convent ... They are said to be generally mild and unassuming in their manners, and in their behavio ... inferiors; all the wealth of the country seems to centre in their body, while a general p ... vades the rest of the community. A singular species of polyandry exists among the Thibeta ... brothers born of one mother have but one wife in common, who is selected by the eldest. It ... pens, it seems, that she has any preference for one of her husbands; love and jealousy in t ... forms are feelings which seem to be unknown to these people. Their ordinary dwellings are ... consisting of rough stones heaped together without cement, and with flat terraced roofs. ... gious buildings, however, which combine the triple character of temples, monasteries, ar ... sometimes display extraordinary splendour. That of *Pootla* near Lassa, the summer re ... the Dalai-lama, is said to contain 10,000 apartments filled with gold and silver images, and ... roof richly gilded. Thibet is neither an independent kingdom nor a province of China; i ... a geographical region divided into a number of states, the majority of which pay a small tri ... Dalai-lama, who is himself, as well as all the rest, under the protection of the emperor ... The emperor's residents, however, at the courts of the sovereign lamas, have, of late years ... so much influence in the internal administration of the country, that it may be regarde ... entirely dependent. The frontiers, as in other parts of the empire, are strictly guarded a ... intrusion of strangers.

Lassa or *Hlassa*, the capital of the Dalai-lama, and the ordinary abode of the *Tsin* or Ch ... dent or viceroy, situate upon an affluent of the Sanpoo, is a large well-built city, with hou ...

or three storeys. It has in the midst of it an immense temple, formed of an assemblage of buildings, with a bazaar around it. The population is large but fluctuating, owing to the constant arrival and departure of pilgrims, who come from all parts of the realms of Buddha, to this sanctuary of Lamaism. About 8 miles N.W. of the city is the vast temple of *Brae-poung-chong-pa*, which is attended by more than 5000 lamas; and in the neighbouring plain are 21 other temples. *Jigagounggar*, near the right bank of the Sanpoo, though neither marked in our maps, nor described in our books of geography, is a large and important city of 20,000 houses. *Jikadze*, also near the right bank of the Sanpoo, is said to have 23,000 families, and a garrison of 5300 men; it is the capital of the territory of the lama styled Bantshan or Bogdo-lama. Near it, to the west, is the magnificent convent of *Jashi-loumbo* or *Teshoo-loomboo*, where this pontiff resides; and which is said to contain more than 3000 chambers or cells. It is adorned with numerous obelisks, covered with gold and silver, with statues of Buddha in gold, silver, and bronze, and is served by more than 3500 lamas. *Bhaldi* or *Baidi*, a small town near the lake Yamtso or Paltee, which contains a convent on an island, the residence of a female divinity called *Dordjepame*, or the holy mother of the sow. The Hindoos, and Nepaulese, as well as the Thibetans, reverence her as an incarnation of the Hindoo goddess Bhavani. She never quits her dwelling, nor leaves the island, but when she goes to Lassa, in great pomp. During the journey censers are carried before her, and she sits upon a throne covered with a large umbrella; everybody runs to receive her blessing, which she bestows by making them kiss her seal. The convents in the islands of this lake, inhabited by monks and priests, are under her direction. The western part of Thibet bears the Chinese name of *Chanthan* (Snow country), but is known to the Bhooteas as *Hiun-des*, and to the Thibetans as *Nari*; including the provinces of *Garo*, *Rodokh*, *Gardokh*, *Sumgiel*, and *Tholing*, the two last of which are immediately contiguous to Piti in Ladakh, and to the British dependencies of Bissaher and Kunawar. Tholing, the chief town is situate on the left bank of the Suttlej, and is a place of considerable note; it is said to contain 108 temples, with a number of gelums attached to each. Chan-than is the chief resort of the shawl-wool goat, and is also pastured by numerous flocks of sheep, whose wool is an article of trade. It likewise produces gold in considerable quantity; but the searching for it is discouraged by local superstition as well as by the Chinese authorities. *Gardokh*, called also *Gartokh*, *Ghertope*, or *Garo*, is little else than an encampment, consisting of a number of small blanket tents, with a few houses of unburnt bricks; it is in fact merely a trading station, or mart, where, in the summer months the natural productions of Thibet and China are exchanged for those of India.—(*Moorcraft's and Trebeck's Travels*, vol. I. part 2, chap. 5.) To the south-east of Gartope are situate the two celebrated lakes *Manasarowara* and *Rawan-rhad*; the former of which is an oval basin about 15 miles by 11, nearly 17,000 feet above the level of the sea, surrounded by tremendous rocks, above which rise the loftiest summits of the Himalayas. The waters are clear and well tasted; but it is yet uncertain whether or not they have an outlet. Once to behold the Manasarowara is considered by the Hindoos as a felicity beyond every other on earth; but the great and almost insurmountable difficulties of the journey prevent all but a select few from accomplishing the pilgrimage. It was visited by Mr. Moorcroft in 1812. The Rawan-rhad, which he only saw at a distance, was said to be four times the size of the other, and to enclose some lofty mountains in the form of an island; but his distant observation did not confirm these statements. It emits its waters by the Suttlej.

LOOCHOO (*Doo-choo*, *Lekayo*, *Low-kow*, *Lieou-kieou*, *Lieu-kieu*, *Lieu-chew*) is an insular kingdom, in the Pacific Ocean, to the eastward of Formosa; the principal island lies between 26° 4′ and 26° 53′ N. lat., and 127° 34′ and 128° 18′ E. long., being nearly 60 miles in length by 10 or 12 in breadth. The climate is very temperate; and such is the excellence of the soil and climate, that vegetable productions, of different natures, and generally found in distant regions, grow here side by side. Not only the orange and the lime, but the Indian banyan tree and the Norwegian fir, the tea-plant, and the sugar-cane, all flourish together. The island abounds in rice, wheat, pease, melons, pine-apples, ginger, pepper, camphor, dye-woods, firewood, tobacco, silk, wax, and salt; and the sea yields coral and pearls. The animals are beeves, sheep, horses, deer, and winged game, goats, pigs, and poultry. The people are of small stature, with a good deal of the Corean physiognomy, but with nothing of the drowsy and elongated eye of the Chinese. They are a polite and cultivated race. Their language differs both from the Chinese and Japanese, though it has many words common to both. Their books of religion, morality, and science are written in the Chinese character; but, for common purposes, the Japanese letters are used. They seem to have made no progress in science and literature; all their acquirements have been derived from China. Their religion seems also to be of the same nature as the Chinese, but the priests are considered an inferior caste. Their government is monarchical. The only town with which Europeans are yet acquainted is the great seaport of *Napa-kiang*, on the south-west coast, about five miles from the capital, *Kien-ching*. The group contains altogether 36 islands, all of which are small; and the only one deserving particular notice is *Sulphur Island*, 80 miles N. of the Great Loo-Choo, which contains a sulphuric volcano, that constantly emits white smoke. The *Madjicosima Islands*, the principal of which is *Typinsan*, and situate midway between Loo-choo and Formosa, are also subject to the king of Loo-choo, who is himself tributary to China.

LADAKH

Is a portion of the mountainous region situate between the Himalayas on the south, and the range of Kara-korum on the north, extending about 250 miles from E. to W. and 200 from N. to S. but with an irregular outline, and comprising altogether a superficial area of only 30,000 square miles. It is bounded on the north-east by the mountains of Kara-korum, which divide it from the Chinese province of Khoten; on the east and south-east by Rodokh and Chan-than, dependencies of Lassa; on the south by the British subject territory of Bissaher, and by the hill states of Kulu and Chamba; Balti, Kartakshe, and Khasalun complete the boundary on the west and north-west. The country consists of a series of narrow valleys, which are sometimes little better than deep ravines or defiles; and even at their greatest expanse, do not exceed a few hundred yards in width at the bottom. They are all situate at the great elevation of from 11,000 to 13,000 feet above the level of the sea, and the mountains which form them rise several thousand feet higher. The passes which lead into Ladakh on its southern frontier exceed 16,000 feet, and there are several mountains within the country of still greater height. The general character of the surface is extreme inequality, consisting of steep and bare mountains capped with snow, and close rocky dells, with rapid torrents or deep rivers rushing through them. There is accordingly little room for the labours of agriculture; and the proportion of available ground does not probably exceed one-fifth of the country; and the soil being formed by the disintegration of primitive rocks, is such as to be only rendered productive by human industry and skill. The general aspect of the country, where not under cultivation, is one of extreme sterility, in which a few willows and poplars are the only trees, and the chief verdure consists of Tartaric furze, with a few tufts of wormwood, hyssop, dogrose, and other plants of the desert and the rock, which expose rather than conceal the barrenness of the soil. Nor is the climate more auspicious to the labours of the husbandman. Frost, snow, and sleet commence early in September, and continue with little intermission till May. In May the days become warm, though even then the rivulets present a coat of ice early in the morning; which may be observed in some spots even in June, while on the loftiest mountains snow falls occasionally in every month. During summer the sun shines with great power,

and for a short time of the day its rays are intensely hot. Even in the depth of winter the sun's heat is very considerable for an hour or two, and the variation of temperature is consequently extreme. The great heat of summer compensates the shortness of its duration, and brings the crops to rapid maturity. The air is generally dry, the moisture being converted into snow in winter, and speedily evaporated in summer; there is consequently very little rain. The harvests however are not unproductive; and they present also the peculiarity of yielding equally abundant crops year after year from the same land, without fallows or rotation of produce. The water is in general clear and pure; but is often discoloured by earth, and impregnated with soda and alum. In general it is unwholesome to strangers, and at some seasons even to the natives. The species of grain cultivated are wheat, barley, and buckwheat, of various kinds. The natural sward is composed of a starveling low grass and dwarf sow thistle; in bogs the surface is covered with a short rush and bent grass, with some varieties of crowfoot and dwarf equisetum. The islands and banks of the rivers are in some places naked, in others fringed or concealed by a kind of thorn. In some places natural springs keep the surface perpetually wet during summer, and are then surrounded by beds of low rush and aquatic grass, affording wholesome pasturage. Lucerne, both wild and cultivated, grows in some places with great luxuriance, and is gathered as winter fodder for the cattle. A species of salnfoin also grows wild in some places; but the most valuable source of fodder is the *prangos*, an umbelliferous plant, which grows only in the western districts of the country. The head of the plant, including leaves, flowers, stems, and seeds, is converted into hay for the goats, sheep, and cows. Horses also will thrive on it; but it is only as hay that it is an acceptable food; whilst growing, no animal will browze upon its leaves, though they will eat its flowers. There is no great variety of culinary vegetables; but onions, carrots, turnips, and cabbages are reared in some places in spring and summer; carraway, mustard, and tobacco are grown in a few gardens. The only fruits cultivated are apricots and apples; rhubarb is produced in great abundance. The domestic animals are horses, asses, yaks, beeves, the zho or yak-mule, sheep, goats, and dogs. The horses are small, but active and hardy; but they are not numerous, nor much used. The sheep are larger than those of India. The common breed of goat is the shawl-wool species; the fleece is cut once a-year; the wool picked out is sent to Cashmere, but the hair is made into ropes, coarse sacks, and blankets, for home consumption. The dogs are large, with a shaggy coat of a dark colour, and are in general fierce, but intelligent. The wild animals are not numerous; they are mostly of the goat kind, are much larger than the domesticated species, and yield a finer wool. The ibex frequents the loftiest and most inaccessible rocks; the wild sheep is also met with; and in the eastern parts of the country a sort of wild horse or ass. Large mice, hares, squirrels, foxes, ounces, bears, lynxes, leopards, and marmots abound; and in the mountains a species of tiger. The birds consist of a large, fierce, and powerful raven, another large ravenous bird called chakor, sparrows, linnets, redbreasts, skylarks, snowlarks, and water birds of various kinds. Fish abound in all the streams, but are not used for food. There are mines of sulphur in some places; soda is found in great plenty along the banks of the Sinh-kha-bab, and in the district of Nobra; lead, iron, and copper are also found; but want of fuel and want of industry prevent them being wrought. The rivers are all affluents of the Indus (see *antè*, p. 682). In the eastern part of the country are two large lakes, which have no outlets, but are kept at their level by evaporation. The lake of *Panzkung* is about three miles broad, but of unknown length, though not less than 50 miles; the water is extremely salt, and contains apparently no fish. The other lake, named *Tsumereri* by Mr. Trebeck, and *Chumomenil* by Mr. Gerard, is situate among steep mountains which rise abruptly from the water; it is about 14 miles in length, and 2 in breadth, and 15,000 feet above the level of the sea. The water is brackish, and seems to contain no fish. In the middle of May Mr. Trebeck found this lake sufficiently frozen to bear the weight of a man across it.

The people of Ladakh are of the Thibetan stock; but a considerable number of Cashmirians have settled at Leh, and have produced a mixed race called *Argands*. The whole population may amount to 150,000 or 180,000. There is not much wealth in the country, but what there is is equally diffused, and the great body of the people are in easy and comfortable circumstances, owing chiefly to the valuable fleeces of their goats. They pay no taxes in money, but are bound to give suit and service, both domestic and military, and to furnish contributions in kind for the support of the Rajah and the provincial governors. The severity of the climate renders warm clothing indispensable, and woollen clothes are therefore worn by all classes. The people are in general mild and timid, frank, honest, and moral, but indolent, dirty, and addicted to intoxication. Their religion is nominally Buddhism, but is a strange mixture of metaphysics, mysticism, fortune-telling, juggling, and idolatry. The doctrine of the metempsychosis is curiously blended with tenets and precepts very similar to those of Christianity, and with the worship of grotesque divinities. The country is infested with idle lamas and gylongs, who live on the industry of the people. The government is a simple despotism; but it is so curiously modified by the circumstances of the people, and the influence of the priests, that the Rajah, unless he is a person of uncommon talent and energy, is possessed of little real power, and may even be deposed, his successor being always a member of his own family. The business of government is administered by the khalun or prime minister, assisted by the nuna-khalun or deputy, the lom-pa or governor of Leh, the chug-zut or treasurer, and the banka or master of the horse. The districts and towns are governed also by inferior khaluns or tan-zins, or rajahs; and the business of the magistracy is discharged by officers called nar-pas, and by the head men of the villages. There is no permanent military force; the peasants giving their service as soldiers when required. The Rajah is nominally independent, but pays a tribute, disguised under the name of a present, to the authorities of Gardokh, on behalf of the government of Lassa. The country is divided into the principal pergunnahs or districts of *Ladakh*, in the centre; *Nobra*, on the north; *Zanskar*, on the south, and *Spiti* or *Piti*, on the south-east. *Le* or *Leh*, the capital of Ladakh, situate at the foot of some hills, stands in a narrow valley, about two miles from the banks of the Sinh-kha-bab, from which it is separated by a sandy plain. It is inclosed by a wall, with projecting towers; but the streets are disposed without order, and the town forms a confused assemblage of houses. These are partly of stone and partly of brick, generally of two or three storeys; some are loftier, and their total number is estimated at 1000, though Mr. Moorcroft thinks 500 nearer the truth. The palace of the Rajah is a large and lofty building, forming a conspicuous object, standing within the view of the city; the whole town, at a distance has much the appearance of a cluster of cards.—(*Moorcroft's and Trebeck's Travels*, vol. I. Lond. 1841.)

CHITRAL, GILGIT, KAFFIRISTAN, and LITTLE THIBET, are situate to the westward of Ladakh, and occupy the remainder of the elevated mountainous region which extends from the Himalayas on the south to the Hindoo-Koh, Belur-tagh, and Tsung-ling or Kara-korum mountains on the north. They are exact counterparts of Ladakh, and the same description will equally apply to all; their valleys are all drained by the affluents of the Indus. The inhabitants of Chitral, Gilgit, and Little Thibet are Shiah Mahometans; and their princes boast of their descent from the celebrated Secunder Zoolkurneenee (Alexander the Great.) Chitral is subject to Kunduz; Gilgit is a strong country and independent; but very little is known about either of them. *Iskardo* or *Skardo*, the capital of Balti, in Little Thibet, is a large fortified town of irregular construction, on the left bank of the Indus, nearly due north of Cashmere, and 140 miles N.W. by W. of Leh. The chief of Iskardo boasts that his capital was built in the days of Alexander. *Kaffiristan* is the most westerly portion of this region, and situate immediately to the north of the Kohistan, or hill country of Cabul. It contains many

elevated table-lands, on which there are always villages. The winter is severe, but in summer grapes ripen in great abundance. It is the abode of a singular people, called by their Moslem neighbours the Siahposh Kaffirs, or Black-vested Infidels, from their wearing black goatskin dresses; they are entirely confined to the mountains, and are persecuted by all the surrounding nations, who make them slaves. They appear to be a rude uncivilized race, with very little religion; and, possessing a country strongly fortified by nature, they wage interminable war with the Moslems, and have repaid on them with tenfold vengeance the injuries which they have themselves suffered. Yet at times they are peaceable, and allow their country to be visited by commercial traders, and even make short periodical truces with some of their immediate neighbours. Gold is found among their mountains, and formed into vessels and ornaments; and various circumstances, taken in connection with their personal appearance and fair complexion, in which they differ from other Asiatics, have given rise to an opinion that they are of Grecian descent; probably the remains of settlers from Alexander's army, or of those who formed the Grecian kingdom of Bactria, and were driven by the fanatic followers of Mahomet into the wilds which they now occupy. They possess great agility and activity.

TURKESTAN.

THIS country is situate between 36° and 51° N. lat., and 45° and 78° E. long. From east to west, between the sources of the Syrdaria and the Caspian Sea, it extends about 1350 miles; and in breadth, from the northern frontier of Persia to the frontier of Russia, including the steppes of the Kirghiz, about 1260. It is bounded on the north by the Russian provinces of Orenburg and Tobolsk; on the south by Affghanistan and Khorassan; on the east by the mountains of Pamer, part of the Belur-tagh, which divide it from Chinese Turkestan; and on the west by the Caspian Sea and the river Ural. The greater part of the country is composed of sandy plains, intersected by a few rivers, and studded with small lakes, the banks of which, with the grounds within reach of irrigation by their waters, are the only cultivated parts of the country. It rises gradually from the shores of the Caspian and the Aral towards the south and the east, on both of which sides it is inclosed by high mountains, which give rise to its principal rivers. The south-eastern region is a hilly country, formed by the diverging ranges of the Hindoo-koh; and the eastern is formed, in like manner, by the divergent and subordinate ranges of the Belur-tagh. The great plain at the foot of the mountains has an elevation of about 2000 feet; but it gradually declines westward to the Caspian, where it is as low as the level of the ocean. From the Sir northward to the Moughojar hills, through a space of more than 270 miles, not a single river crosses the desert, which, however, contains a number of shallow saltwater lakes, and has exactly the appearance of land from which the sea has retired. These lakes are in some places dried up, and have left a cake of salt, of dazzling whiteness, covering an area sometimes of 6 or 7 square miles. Immediately along the east side of the Aral are the two great deserts of *Kara-koom* and *Kizil-koom*, or the Black and the Red Wastes; the former of which is in some parts 175 miles broad, extending from the north-east corner of that sea to the mouth of the Sir, and the other from the Sir to the Amoo, forming an ocean of sand, without a drop of fresh water, and covered with moveable hillocks, which rise between 12 and 60 feet above its surface. To the north of the Aral is a wild hilly region, thinly inhabited by nomadic tribes; and the highest part of the country in that direction is occupied by the Moughojar hills, which are a continuation of one of the groups into which the Urals are divided at their southern extremity; the same red sandstone which composes the Urals at Orenburg extending into the steppes. In the northern and westerly part of the region there are extensive hills; but, towards the south and the east, this hilly region gradually sinks into plains composed of clay, marl, and calcareous tufa, covered with loose sand, which is blown by every storm of wind into hillocks, and forming altogether a depressed tract of immense extent, interspersed with innumerable lakes and morasses, the general direction of which, from the shores of the Aral north-eastward, favours the opinion that the whole region was at no remote period under water. These deserts, however, are partially interrupted by two ranges of low hills, called the *Great* and the *Little Bourzouk*, the latter of which terminates in a promontory at the north-eastern corner of the Aral, while the other extends considerably to the westward. North-eastward, again, from the Little Bourzouk are some hills of hardened marl, full of marine shells, a formation which extends to the shores of the lake, of which these hills appear to have recently been the shore, though they are now 40 miles distant from it. Between the Caspian Sea and the Aral the country is occupied by an elevated region called the *Ust-urt* or High Plain, which extends north and south from the 41° to the 47° N. lat., or about 400 miles. It is bordered all round by a small chain of calcareous hills, called the *Chink*, which forms the western and north-western shores of the Aral, and touches the Caspian at the Mertvoi-Kuttock or Dead Gulf, where it forms also the shore of the *Tiouk-kara-su*, a deep indentation of that gulf. When approached either from the north or from the south, the Chink presents a precipitous face or cliff, in which the openings are so few, so narrow, and so difficult, that it may almost be considered inaccessible; it is so steep towards both seas that it rises at once 639 feet above them. The Ust-urt rises in some places to 727 feet above the Caspian, and its lowest elevation is 550 feet above the same level. On its north-eastern side it is connected with the Moughojar hills, and thus forms a complete bar to any communication between the two seas. The climate of the Ust-urt is perceptibly more unequal and severe than that of the low country; on which account it is considered advisable to make the circuit of the sea of Aral, rather than pass between the seas, in travelling between Khiva and the Russian frontier. The Ust-urt does not possess a single river; the bushes and herbage which grow upon it are fit only for camels, but not for horses, and still less for sheep. Springs are rare, and the water is far below the surface. In the middle there are some salines and sandy tracts. The general sterility and the violent winds and storms to which the Ust-urt is exposed, render it quite uninhabitable; and no Kirghiz are ever known to encamp there in winter. It presents the same appearance to the eye as the lower steppes; both consisting of sandy clayey ground, sand, and saltpits, and containing the same vegetation, with the exception of a bushy plant called balalysh, which is not met with in the lower steppes. Near the Ust-urt, at different distances, are distributed hills of unequal elevation, but extending in the same direction as the Chink; and to the south of the Emba there is a chain of hills, or rather a small plateau, called Jildi-tagh; all of which appear to have been formerly connected with the Ust-urt, and to have been afterwards separated from it by the action of the waters which covered the lower plains, at a time when the Ust-urt formed a large peninsula, connected with the northern mainland by the Great and the Little Bourzouk, which may even be considered as its north-eastern prolongation.

The steppes of the Kirghiz have not every where a uniform surface, nor do they constitute a vast plain, as the name might be thought to imply; they are, on the contrary, intersected by many chains of hills, and no where exhibit those boundless expanses which are met with elsewhere. The surface is for the most part unequal, and covered with small round-topped hills; but, as these hills are neither high nor clothed with trees, the name of *steppe* is sufficiently applicable to the country. There is also a great want of water, which causes an excessive dryness, an inconvenience which may be attributed to the rarity of rain, the extreme summer heat, the clayey soil, and the winds which pass over it. The verdure is consequently poor, and the general appearance is unvaried and fatiguing to the eye. It may, however, be divided into several regions of various degrees of fertility. The most fertile and least

sandy part is the northern region, between the 51° and 55° N. lat.; the meadows there are rich in pasturage and in every kind of flowers; there are forests which produce timber fit for building, as well as fire-wood; many plains of a strong soil, fit for agricultural purposes; lakes abounding in fish; and rivers of fine, palatable, and wholesome water. The second region, bounded on the north and west by the river Ural, and to the south and east by lines extending from the Moughojar mountains to the fortress of Orsk and fort Boudarinsky, consists of a clay soil, watered by a great number of rivers, and consequently abounding in herbage; it contains also several places fit for cultivation, but, with the exception of some bushes and trees on the banks of the river Ilek, no wood appears anywhere. Notwithstanding its distance from the sea, it contains many shells, pebbles of divers colours, petrifactions, mollusks, and other marine remains. The third region extends to the south of the second, terminating at the Caspian sea on the south-west, at the Ust-urt on the south-east, and at the Steppe of Mouss-bil, between the Moughojar hills and the Ust-urt, on the east. It is evidently less fertile than the second region, contains large spaces of sand, vast marshes, and lakes of water unfit for drinking. The small streams which water it are almost all saltish, even to bitterness, and become dry in summer. It affords in summer ample food for camels, but it is only in autumn that the herbage becomes fit for horses, after the cold has modified its dryness; watering places are rare; and cultivable ground is only to be found in the north, along the water courses, and even there in small quantity; the southern part, almost entirely occupied by salt lakes and marshes, and beds of reeds, is completely sterile. The fourth region is the Ust-urt already described; the remainder of the country, extending to the east and the south, is generally sterile; but towards the north-east, being watered by streams from the northern hills, it becomes more fertile and pleasant, and contains many valleys fit for cultivation. The most southerly region presents scarcely anything but general sterility, as in the sandy wastes of the Great and the Little Bourzouk, the Kara-koom, the Kizil-koom, the Arch-Koudouk-koom, the desert Biptak, the lake Balkask, the reed-beds which surround it, and the almost unknown steppes which are traversed by the rivers Chou and Talash. Several places, however, in the northern and western regions are remarkable for their fertility.—*(Description des Hordes et des Steppes des Kirghis-Kazaks, ou Kirghiz-Kaussaks, par Alexis de Levchine.* French edition, Paris, 1840.)

RIVERS.—The JIHOON or AMOO[a] (ancient OXUS) has its source in the *Siri-kol*, a lake in Khunduz, N. lat. 37° 27′, E. long. 73° 40′, 15,600 feet above the level of the sea, and encircled with mountains, except on the west side, where the river finds a channel. After leaving the mountains, it passes through the sandy plains in a north-westerly direction, fertilizing a narrow tract of about a mile in breadth on each side, till it reaches the territories of Khiva, where it is divided into a great number of branches, and forms at last a swampy delta, overgrown with reeds and aquatic plants, and terminating in the sea of Aral. Its channel throughout is remarkably straight and free from rocks, rapids, and whirlpools, nor is it much obstructed by sandbanks; and were it not for the marshes which obstruct its mouth, it might be navigated from the Aral to near Khunduz, a distance of 600 miles. Being the only drain of an extensive hill country, it pours down a great body of water, and is never fordable below the junction of the Ak-Sural, 40 miles N.W. of Khunduz. The melting of the snow causes a periodical swell in May, which continues till October and the river is also subject to a second but smaller flood during the rains of spring. It fluctuates also in its rise and fall with the state of the weather; in the upper part of its course it is frozen every year, so that, above Khunduz, passengers and beasts of burden cross it on the ice, on their route to Yarkhand. Below Khiva it freezes yearly, and throughout the desert it is also frozen over in severe winters. Its advantages, however, both in a commercial and in a political point of view, are very great. According to tradition, a branch of the Amoo, if not the whole stream, once flowed westward to the Caspian Sea; and the deserted bed of the river can still be traced in that direction, terminating in the Gulf of Balkan; but when the change took place, and whether suddenly or gradually, is uncertain. Its principal affluents are the *Soorkh-ab*, or river of Karategin; *Koksah*, or river of Badakhshan; *Kafernihan*, or river of Hisar; the *Tupalak*, and the *Zurhab*, on the right bank; the Ak-surrai, *Bunghee*, *Surkhab*, or river of Goree; the *Khooloom*, and *Adirsiah* or *Dehas*, on the left.

The SIR-DARIA or SIHOUN, called, in the upper part of its course, NARYM, rises among the Teeanshan or Sky Mountains, to the south of the south-west corner of Temourtou or Issek, in the country of the Highland Kirghiz, who are subjects of China. The Narym has considerable affluents. About 250 miles above its mouth in the Sea of Aral, a branch called *Kouvan* separates from the main stream of the river, and is afterwards subdivided into five branches, which again unite, and a little lower down form a great number of lakes of different sizes. According to Meyendorf, the Sir is rejoined near its mouth by the Kouvan through a little brook. It washes Khojend, Tounkat, and Otrar, passes a little to the north of Khokand, and some miles to the west of Taskkend. It is much smaller than the Amoo, but is said to be more rapid. In summer it is fordable; and in winter it is covered with ice, sometimes two yards thick, over which the caravans pass.

Next in importance to the Sir is the *Kohik* or *Zurufshan* or *Zerafchan*, which rises in the high lands east of Samarcand, and passing north of that city and Bokhara forms a lake (Kara-kool, Black Lake), in which it terminates, not far from the right bank of the Amoo. In the upper part of its course it waters the rich province of Samarcand; below that city its waters are diverted, for the purpose of rice cultivation; for three or four months of the year its bed is perfectly dry at Bokhara; and in consequence that city and the country below it suffer great inconvenience, as they depend on the river for a supply of water. The lake into which it flows is familiarly called *Denghis* or the *Sea*, and is about 25 miles long, and surrounded by sand hills. It is very deep, and does not appear ever to decrease in size at any season. When the snow melts in summer, the water flows as steadily into it as it does in winter; its water is salt. The river of *Khurshee* rises in the same high lands as the Kohik, and passes through Shuhr-Subz and Kurshee, below which it is lost in the desert. The fields of Shuhr-Subz yield rich crops of rice; and Kurshee is a sheet of gardens and orchyards. For six miles on the one side and sixteen on the other, the waters of the river are distributed by canals; and where these cease there is again a barren desert to contrast with the beautiful herbage of the watered district. The *river of Balkh*, already mentioned as a branch of the Amoo, rises south of the Hindoo-koh, about 20 miles from Bamean, near the *Band-i-Burbur*, a celebrated dam, ascribed to a miracle of Ali, and appears to be a mass of earth that has fallen in upon a ravine. The river then flows north among the mountains, and enters the plains of Turkestan, about six miles south of Balkh, where it is divided into innumerable channels which intersect the whole country, and so completely absorb the waters that none of them reach the Amoo. The *Sara-sou* flows through the country of the Kirghiz of the great horde into Lake *Jeka-Kool*. The *Chou* or *Shou*, which comes from Soungaria, out of Lake Issi-koul, flows through the Kirghiz country of the middle and the great hordes into the lake *Kaban-Koulak* or *Bei-le-Koul*. The *Emba* rises from the western flank of the Moughojar hills and flows in a south-westerly direction into the north-eastern corner of the Caspian sea. The *Ulkhiak* and *Ulu-Irghis* flow from the eastern flanks of the Moughojar hills in a south-easterly direction into the Salt Lake or marsh *Ak-sakal-barbi*. The *Noura* rises from the hills to the north-west of Lake Balkash, and flows north-westerly into the lake Khurkaljine.

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[a] *Jihoon* means a flood, and is the name used in all the Turkish and Persian works which treat of these countries; but the people on its banks now speak of the river under the name of *Amoo*, calling it *Darya-i-Amoo*, the *river*, or literally the *sea of Amoo*.—*(Burnes' Travels*, II. 186.)

LAKES.—The lake commonly called the SEA of ARAL, is situate in the western part of Turkestan, between 43° 35′ and 46° 48′ N. lat., and 52° and 68° E. long. It is very nearly of a square form, but with a considerable extension to the north-east, and measures from south-west to north-east 370 versts, or 245 English miles; its greatest breadth, along the 45° parallel, is about 190 versts, or 124 English miles; and it contains a superficial area of about 21,000 square miles. The Arabian and Persian geographers called it the lake of Khwarism, Kharasm, and Urghunge; but the Kirghiz-Kazaks and their neighbours call it Aral-denghis or Sea of Islands. In the Russian annals it is called *Cinoe* or Blue Lake. The water is not so salt as that of other seas, and even near the mouths of the Amoo and the Sir, at some distance from the shore, it is almost fresh; the eastern and southern shores are low, for the most part sandy, but in some places covered with reeds. The western and northern shores are high and precipitous, being formed by the Chink or border of the Ust-urt. In the eastern, or rather south-eastern part, are a multitude of small islands named Barça-Kaltmass, and, to the northward of the middle, is a large island named Barça-Kilmess, covered with wood. The lake freezes in winter, and from the mouth of the Sir to the town of Kourgrat it is passed on the ice. The fish are of the same species as those of the Caspian. Many of the Kirghiz allege that in the middle of the lake there is a whirlpool, which no vessel dare approach. Its surface, as ascertained barometrically in 1826, is 18 toises, or 115 feet higher than that of the Caspian.—(*Levchine*, 47.) The depth is not great, and there are so many sand-banks near the shores that the fishermen are obliged to use flat-bottomed boats. Its waters are said to be rapidly diminishing.

In the steppes of the Kirghiz there are a great many lakes, which differ in their properties as well as in extent. Some are fresh, some bitter, but the most of them are salt. The principal of them are: the *Balkashinoor*, about 130 miles in length from north to south, bordered on the west and south by sands, and on the north-east by very extensive beds of reeds. It receives the river Ili (Eelee) from the Tarbagatai; the Alaguz from the north-east, and a number of smaller streams. The *Issyk*, *Issek*, or *Tous* (Warm or Salt Lake), called by the Mongols *Temourtou*, and by the Chinese *Ie-Gai*, among the hills to the south of the Balkash, is about 100 miles in length by 34 in breadth. The water is almost fresh, and abounds with fish; its outlet is the river Choui. To the north-east of the Balkash are two lakes, the *Sacyk* or *Aluk-tou-koul*, and the *Ala-koul*, only divided by an isthmus composed of saltish substances, which seems to be of recent formation. None of the other lakes are of the least importance.—(*Levchine*, 47, &c.)

CLIMATE, AND NATURAL PRODUCTIONS.—The climate of the plains and the steppes of Turkestan is subject to extremes of heat and cold; the sandy surface of the country producing an intense heat in summer, while, on the contrary, in winter the same deserts are sometimes covered with snow, and are always very cold during the night. In the steppes of the Kirghiz the extremes are remarkable; the thermometer often falls below 30° of Reaumur, or 36° of Fahrenheit below zero; and, even at the mouth of the Sir, 45° N. lat., it falls to 20° or —13° of Fahrenheit. In such a temperature the rivers, mountains, and plains of the steppes, are necessarily covered with snow, which is very deep, and lies long. At the mouth of the Sir snow does not always fall in winter, but almost every year the lower part of the river, and the northern part of the Aral, are coated with ice. Nor is the extreme cold the only evil; severe storms, hurricanes, and whirlwinds, blow over the steppes, carrying every thing which is moveable before them. These colds are succeeded in summer by excessive heat, which is nearly insupportable by either man or beast. In the region adjoining the river Ural the temperature sometimes rises to 50° Reaumur, or 145° Fahrenheit, in the sun, and to 34° (109° Fahrenheit) in the shade. The hand cannot then be applied to iron, and the sand is so hot as to roast eggs. The climate, however, is generally healthy. Rain is very rare in the steppes; the ground is consequently very dry, and, in summer, breaks into cracks or crevices. In general the seasons in this country may be represented as follows: — spring, sudden and fleeting; summer, dry and burning; autumn, rainy, gloomy, and short; winter, long, dry, and constantly cold.—(*Levchine*, Part I. ch. 2.)

Among the mammiferous animals in the steppes the rodentia are the most numerous; wolves inhabit caverns of the gypsum mountains, and the sandy districts; the canis corsac roams among herds of the antelope saiga. Horses are the most valuable domestic animals in almost all the grassy steppes of Persia, Turkestan, and Siberia. Among these the beautiful race of Argamats supply the cavalry of Khiva. Camels, of both species, and sheep, frequently of a good breed for wool, and some of them fat-tailed, beeves, and goats, constitute the wealth of the wandering tribes. Fine wool goats are bred in Bokhara. The tiger has been found in the vicinity of the Aral, on the banks of the Sir and the Kouvan. The wild boar is found in great numbers in the vicinity of all the rivers; the mouse in the Kirghiz steppes; and the dog geese, so called from their burrowing in the ground. The falco chrysætos builds its nest in the Kirghiz steppes. But, generally speaking, the natural productions peculiar to the country are comparatively few in number, and of little consequence.—(*Zimmerman's Memoir on the countries about the Caspian and Aral, &c.* London, 1840.)

PEOPLE.—The most numerous race who occupy the low country are the *Usbecks*, who distinguish themselves by 32 tribes, into which they are said to have been divided in their pastoral seats, before they conquered this country. The first tribe crossed the Sir about the beginning of the 16th century, and possessed themselves of Bokhara, Kharism, and Khokand. They are also to be found beyond the Belur-tagh, as far east as Khoten, and probably further. They are of the Turkee or Turkish race, and are generally short and stout made, with broad flat foreheads, high cheek-bones, thin beards, small eyes, clear and ruddy complexions, and generally black hair. Their dress consists of a shirt and trowsers of cotton, with a coat of silk or woollen cloth, which is bound with a girdle; and above this a gown of woollen cloth, pasteen, or felt. The head is covered with a white turban, worn in general over a kalpack. Both men and women wear boots, and bandages round their legs instead of stockings; and every man has a knife suspended from his girdle, with a flint and steel for striking fire. The women have a dress similar to that of the men, but longer, with a silk handkerchief tied over the head, and the hair plaited into a long tail, which hangs down from the middle of the head in the fashion of the Chinese. They wear gold and silver ornaments, and over all throw a sheet of silk or of cotton. The aborigines of the country are the *Taujiks* or *Tats*, sometimes, but erroneously, called *Sart*, which is merely a nickname given them by the nomadic tribes. The Taujiks are devoted to commerce; their language is Persian, which has long been that of the country; and it is most probable that they are themselves of Persian or Arabian origin, descended from the first Moslem conquerors. There is besides a great number of Persians in Turkestan; and many Jews, Hindoos, Armenians, and Russian slaves. The northern parts of the country, towards the Russian frontier, are occupied by nomadic races formed by an intermixture of *Kalmucks*, *Kazaks*, and *Kirghiz*. The Kalmucks and the Usbecks are said to have sprung from one tribe; and the Kirghiz and the Kazaks appear to be much the same people, differing only in location. The Kazaks pass the summer in the southern parts of Russia; but repair in winter to the neighbourhood of Bokhara, where they sell their sheep. The Kirghiz occupy the wide plains or steppes which extend along the southern frontier of Siberia to the east of the Aral, and the north of the Sir. They are divided into three branches or hordes, called the Great, the Middle, and the Little horde. The great horde ranges to the east and south on the borders of Cashgar and Khokand, and many of its tribes have adopted the habits of these more improved districts, and acquired a peaceable character, with fixed dwellings; those of them, however, which occupy the higher parts of the hilly regions still merit the name of the wild Kirghizes. The

middle and the little horde occupy the shores of the Aral, extending also towards the Caspian, and retain the nomadic pastoral character in its ancient purity. They own the supremacy of Russia, which pensions their chiefs; and for greater security against their inroads a line of strong posts is kept up between the Ural and the Irtish. The Usbecks and Tanjiks of Bokhara, Khiva, Balkh, and Kokand, are Soonee Mahometans, very strict in their profession, and even fanatical. Several tribes on the eastern borders are Shiahs, and some are idolaters. There are also Jews and Hindoos, who profess, of course, their paternal faith.

Among the numerous states of Turkestan the government is more or less despotic; but each nation or body politic is generally composed of an aggregation of clans or ûrûghs, of which the chief are in many instances elected by the people. The chief administers the internal affairs of the clan, and arranges the quota of tribute, and military service exacted by the general government. But these heads of clans do not unite in any assembly, nor claim the right of exercising any control over the measures of the sovereign.

It may be stated, in general, that in all the great towns the people are industrious; most of them being devoted to agriculture. But the Bokharians are distinguished above all their neighbours for their manufacturing industry, and for the fine cotton and silk stuffs, hats, paper, and other articles which they produce. Bokhara has always been a great mart for the trade of central Asia: and for the last 80 or 90 years it has been visited annually by caravans from the southern provinces of Russia; till within these 20 years the trade in European fabrics was principally confined to the Russians, who brought them from Orenburg and Troitskai; but is now carried on more extensively through India and Cabul. The late attempts of the Russians to open a direct communication with Bokhara have been frustrated by the chief of Khiva, who took offence at measures which threatened to turn the traffic from his own territories; but numerous fairs are now held annually on the southern frontiers of the empire, the chief of which is at Nishnei-Novgorod, on the Volga, which commences in August, and lasts 40 days. It is at this market that the merchants who carry on the trade of central Asia make the most part of their sales and purchases; and even Hindoos are found among the traders. The imports from Russia consist of white cloths, muslins, chintzes, broad-cloth, both of English and Russian manufacture, of imitation brocade (kincob), velvet, with nankeen and and gold thread, all of home manufacture; also furs, cochineal (kermis), locks, iron-pots, iron, brass, and copper; wires, leather, paper, needles, cutlery, and jewellery, hardware, refined white sugar, honey, and a variety of other small articles. The annual caravan which arrives at Bokhara consists of about 1300 camels, and leaves Russia in January. The imports from India by way of Cabul, are indigo, cotton, sugar, white cloths of all kinds, calicoes, and muslins; chintzes of European manufacture, shawls, brocades, muslins, spices, &c.; and Captain Burnes was informed that three-fourths of the articles which are imported from both countries are of British manufacture; many of which can be transported through Russia at less expense, even as far as the borders of India, than through India itself. Besides the Russian and British trade, Bokhara carries on an extensive and direct commercial intercourse with the Chinese garrison-towns of Cashgar and Yarkhand, importing chinaware, musk, and bullion, but chiefly *tea*, of which beverage the people of Turkestan are extravagantly fond. With Persia their trade is inconsiderable, owing to the unsettled state of the roads, which are infested by wandering Turcoman robbers, and the hatred which subsists between the two people, who differ in their religious tenets. The shawls of Kerman form the principal article of import. Opium has also found its way from Persia into Bokhara, and is again exported to Yarkhand and Cashgar, where the same demand exists for it as on the sea-coast of China. The exports of Bokhara are far from inconsiderable, since it possesses silk, cotton, and wool. The silk is chiefly produced on the banks of the Amoo, where the mulberry thrives luxuriantly; and nearly all the Turcomans are engaged in rearing silkworms in summer. It is exported in considerable quantities to Cabul, and even finds its way to India. The silk is manufactured at Bokhara into a stuff called *udrus*, of a mottled colour, red, white, green, and yellow, which is the fashionable and most expensive kind of dress in Turkestan, and is not exported. There are likewise extensive cotton manufactures; their cotton thread is much in demand, and is exported in considerable quantities to Russia, while much of the raw material is sent to Balkh, Khooloom, and Kunduz. The wool of Turkestan is sent across the mountains to Cabul, and the Punjab, where it is made into a coarse kind of shawl. It is procured from the Kazaks and wandering tribes about Bokhara, who were long ignorant of its value, and still use it for the common ropes for their horses and cattle. The lambskins of Bokhara are celebrated in the East: they are procured only in Karakool, and are exported to Persia, Turkey, and China; but chiefly to the first country. The Persian merchants purchase them for ready money, being afraid to risk a commercial investment across the desert. It is not possible to negotiate a bill between Meshid and Bokhara.

DIVISIONS.—Turkestan has never been all subjected to the same sovereign. It may be considered as divided naturally into, 1. *The Steppes of the Kirghiz*, which occupy the northern part; 2. *Mawer-ul-nahar*, i. e. between the rivers Amoo and Sir, the *Transoxiana* of the Latin geographers; 3. *The hill countries* along the southern and the eastern borders. It is divided politically into a great number of states, which differ greatly in extent and amount of population; but the dominant, or at least preponderating native powers are the Khanats of Bokhara, Khiva, and Khokand or Ferghanah. The following are the principal states or Khanats:—

BOKHARA, which is the richest, most populous, and most powerful, is an isolated kingdom of small extent in the midst of a desert. It is an open champaign country of unequal fertility. In the vicinity of its few rivers the soil is rich; but beyond them, it is barren and unproductive. It lies chiefly to the north of the Amoo; but towards the south-east, it crosses the river and holds a supremacy over Balkh, and the Khanats of Andkho and Maimuna. On the banks of the Amoo, the Kohik, and the river of Kurshee lies the whole cultivable soil of the kingdom. Its length along the Amoo is 240 miles. From Balkh to Bokhara the distance is 260 miles of nearly an entire waste; the desert commences about 15 miles beyond the capital. The strip of cultivable ground on the banks of the Amoo is narrow, and much of it lies neglected; the most fertile part of the kingdom is the valley of the Kohik, the ancient *Sogdiana*, which is considered a paradise by the Arabs. Another small portion is watered and fertilized by the river of Kurshee; while Balkh and other places south of the Amoo owe their fertility to the waters which descend from the mountains. The climate of Bokhara is salubrious and pleasant; being dry, and in winter very cold, as is usual in sandy countries. There is constant serenity in the atmosphere, and the sky is of a bright azure blue, generally without a cloud. At night the stars have an unusual lustre, and the milky way shines conspicuously. Even in moonlight, stars are visible on the verge of the horizon, and there is also a never-ceasing display of the most brilliant meteors. In winter, the snow lies three or four months at Bokhara; and the spring rains are often heavy. In Balkh, the heat is oppressive; and the climate is very unhealthy. The harvest is about fifty days later than at Peshawer; the wheat is cut in the middle of June, and at Bokhara it is about a fortnight later. *Bokhara*, the capital, which stands in lat. 39° 43′ N., long. 64° 55′ E., about 1200 feet above the level of the sea, is a place of great antiquity, tradition assigning its foundation to the age of Alexander the Great. It lies embosomed among gardens and trees, and cannot be seen from a distance; the situation is delightful, and the climate salubrious. Its shape is triangular, exceeding eight miles in circumference, surrounded by a wall of earth, about twenty feet high, and

pierced with twelve gates. Few great buildings are to be seen from the outside; but when the traveller passes the gates, he winds his way among lofty arched bazaars of brick, and finds each trade occupying its separate quarter. Everywhere he meets with ponderous and massy buildings, colleges, mosques, and lofty minarets. The city contains about 20 caravansaries and 100 ponds and wells, is intersected by canals shaded by mulberry trees; but is, nevertheless, indifferently supplied with water, the river being six miles distant, and the canal opened only once in fifteen days. In summer the people are often deprived of water for several months. It contains several large mosques, and not less than 366 madreses or colleges, a third part of which are large buildings which contain upwards of seventy or eighty students. Many, however, have but twenty, and some only ten. The students are supported by a public allowance, and are entirely occupied with theology, which has here superseded all other subjects. They are quite ignorant even of the history of their country; and a more perfect set of drones, says Burnes, were never assembled together. Population, 150,000. *Samarcand*, the *Maricanda* of the Greeks, 120 miles E. of Bokhara, is as ancient as the time of Alexander. It was the capital of Timour, and the princes of his family passed their winters there. It has now declined from its grandeur to a provincial town of 8000, or at most 10,000, inhabitants; gardens and fields occupy the place of its streets and mosques; but it is still regarded with high veneration by the people. Some, however, of its buildings still remain to attest its former glory. Three of its colleges are perfect, and one of them, which formed the observatory of Ulugh Beg, is particularly handsome. The tombs of Timour and his family still remain; and the ashes of the conqueror rest beneath a lofty dome, the walls of which are beautifully ornamented with agate. *Kurshee* is a straggling town of a mile in length, with a considerable bazaar, and about 10,000 inhabitants, 140 miles S.E. of Bokhara. To the N.E. of Kurshee, about 50 miles, is *Shuhr-Subz* (the Shehri-Subz of Arrowsmith, and Cher-Sebz of Balbi), the birth-place of Timour, and the seat of a khan. *Balkh*, lat. 36° 48′ N., long. 67° 18′ E., 260 miles S.S.E. of Bokhara, is one of the most ancient cities in the world, and is called by the Persians Am-ool-belud, mother of cities. It is supposed to have been the ancient *Bactra*, said to have been built by Kyamoors, or Cyrus, the founder of the Persian monarchy; and was in later times the capital of a Grecian kingdom, which was founded by the successors of Alexander. It was also the birth-place of Zoroaster, and the seat of the patriarch, primate, or archbishop of the Magian hierarchy. Its present population does not amount to 2000. The ruins extend for a circuit of twenty miles, but present no signs of magnificence; they consist of fallen mosques, and decayed tombs, which have been built of sun-dried bricks; nor are any of these ruins of an age prior to Mahometanism. The city stands in a plain about six miles from the hills, and affords an abundant supply of bricks to the inhabitants of the surrounding country. A stone of white marble is still shown in the citadel, which is said to have been the throne of Kyamoors. These are the only towns in the country; there are some large villages, but none which contain more than 2500 inhabitants. The villages are also few, and widely separated from each other; they amount to about 400, and the whole population of the kingdom is estimated by Burnes not to exceed 1,000,000, one half of which are nomadic tribes. The villages are fortified with mud walls; and in the cultivated parts of the country, single habitations, called *robats*, are scattered here and there, and invariably surrounded by walls.

KHUNDUZ or KOONDOOZ occupies a valley to the south of the Amoo, lying among low hills which extend about 30 miles from east to west, and about 40 from north to south; the climate is most insalubrious, the heat is excessive, and yet the snow lies for three months during winter. It produces rice, wheat, and barley, apricots, plums, cherries, and mulberries. The town, of the same name, cannot boast of a population of more than 1500. The neighbouring districts do not partake of this unhealthiness, but have in general a pleasant climate, and a rich and prolific soil. BUDUKHSHAN or BADAKHSHAN, called also FYZABAD, is situate to the east of Kunduz, to whose meer or chief it is now subject. It lies higher up the Amoo, and is celebrated by both natives and foreigners for its vales, its rivulets, romantic scenes and glens, fruits, flowers, and nightingales. This celebrated country is now almost without inhabitants; it was lately overrun by the chief of Kunduz; its ruler was dethroned, the peasantry driven out of the country, and a rabble of lawless soldiery quartered in its provinces. The natives are Taujiks, very fond of society, and so hospitable that it is said bread is never sold in the country. Their language is Persian, which they speak with the broad pronunciation of a native of Iran. Budukhshan has acquired great celebrity for its ruby mines, which are still worked, but are not very productive. There are also mines of lapis lazuli near the head of the valley of the Koktcha river, about 120 miles E. by S. of Kunduz. Of its capital, *Fyzabad*, once so celebrated throughout the East, scarcely a vestige is left, except the withered trees which once ornamented its gardens.

To the north of Kunduz and Budukhshan, and beyond the Amoo, are the small hill states of *Hisar Koolab*, *Durwaz*, *Shoognan*, and *Wukhan*; the whole of which are mountainous. Hisar is finely watered, and is a rice country, independent of Bokhara and Kunduz; and its capital, of the same name, stands on a rising ground, 260 miles E.S.E. of Bokhara. The whole population of these states is Mahometan.

Between Budukhshan and Yarkhand or Iarkhend, in the Chinese territory, lies the high plain of *Pamir* or *Pamer*, inhabited by the Kirghiz. In the centre of the table-land is the lake *Sir-i-kol*, from which the Amoo flows. The plain extends all round the lake for six days' journey; and all the mountains are described as being reflected in its waters. Pamir is a flat tract, intersected by shallow ravines, and covered with short, but rich pasture. The climate is very cold, and in summer the snow remains in the hollows. The Taujiks call it *Bam-i-duniah*, roof of the world. It is about 15,600 feet above the level of the sea, bordered and intersected by mountains 2000 to 3000 feet higher. This elevated tract is common to India, China, and Turkestan; and from it, as a central point, their principal rivers flow; it is also the centre from which their mountains radiate. From Pamir the ground sinks in every direction, except to the south-east, where similar plateaus extend along the northern face of the Himalayas into Thibet.—(*Wood's Journey to the source of the Oxus*. Lond. 1841.) The inhabitants are nomadic Kirghiz, who cover their whole bodies, even their hands and faces, with sheepskins, to protect them from the severity of the cold. There is no grain in the country, and the people live entirely on flesh and milk. They do not even know the use of flour; and when it is given them they mix it with their soup, but never bake it into bread. Captain Burnes heard of an animal called *rass* by the Kirghiz, and *kooshgar* by the low country people, which was said to be peculiar to Pamir. It is larger than a cow, but smaller than a horse, of a white colour, with hair hanging under its chin, and its head is crowned with very large horns; which are indeed said to be so large that a man cannot lift a pair of them; and when left on the ground, the small foxes bring forth their young in the inside of them! The flesh of this wonderful animal is much prized by the Kirghiz, who kill it with arrows. A common-sized rass requires two horses to carry home its carcase; it is said to delight in the coldest climate. The two-humped camel is also indigenous to Pamir, and the *yak* enjoys the snows of all the neighbouring mountains.

KHOKAND, KOKAN, or FERGHANAH, the country of the celebrated Sultan Baber, the founder of the Mogul empire in India, lies north-east of Bokhara, from which it appears to be separated by the Aktagh, or Asferah mountains. It occupies the upper valleys of the Sir and its affluents, and is a much smaller territory than Bokhara. It is ruled by an Usbeck khan, who claims to be of the same lineage with Baber, but his power is on the decline. The country is celebrated for its silk; and its other produce

is much the same as that of Bokhara. The capital is *Kokan*, an open town on the Sir, about half
size of Bokhara; the ancient capital is *Marghilan*, still a large and fine city, some miles to the so
east of Kokan. *Indejan*, on the Sir, is likewise a town of considerable note; and the Chines
Yarkand call all the people who visit them from the westward Indejanees. *Tashkend*, an anc
and flourishing city 86 miles N.N.W. of Kokan, is described by the Siberian merchants who visit t
a large town of 80,000 inhabitants. Unaccustomed as they are to extremes of climate, these travel
complain vehemently of the oppressive heat of Tashkend. Its whole wealth consists in the produc
the soil; yet that soil would soon be annexed to the desert, were it not for the industry of the inh
tants. Every vegetable substance grown in Tashkend, the mulberry-trees to feed the silk-worms
fruit-trees, even the trees reared for fuel, are with the humbler vegetables, all planted in gard
watered by canals from the little river Cherchik, which flows at 12 miles distance. The staple art
of produce is cotton, in the manufacture of which more than half the population are employed; t
owing to the rudeness of their processes, the Russians, notwithstanding the long land carriage,
supply them with manufactured goods at a cheaper rate than they can make them. *Turkestan*, a t
of 1000 mud houses, defended by a fort, and ditch 15 feet deep. *Och*, at the foot of the Tukht-i-Sulei
mountain, is a town frequented by numerous pilgrims, who come to pay their devotions at a sm
square building on the top of the mountain. Tradition states that Solomon sacrificed a camel on
spot, where the blood is still shewn on a stone which is quite red. It is, however, much frequented
people suffering from rheumatism and other acute diseases, who are said to be cured by stretch
themselves on a flat stone near the building. *Khojend*, on the bank of the Sir, is a fortress surroun
with fields and gardens, like Bokhara. The Kokanese wear skull-caps instead of turbans. The k
keeps up an intercourse with Russia and Constantinople; but there is no friendly feeling towards
rulers of Yarkhand.

The Khanat of KHIVA (sometimes spelled CHIVA) and more generally called ORGUNJE by its
habitants, lies about 200 miles W.N.W. of Bokhara. It is a small but fertile territory, occupying
delta of the Amoo, and surrounded by deserts. The inhabited part is about 200 miles from north
south, and about half as much from east to west; it claims the dominion of the deserts which bor
the Caspian, has of late years established its supremacy over the Turcoman hordes south of
Amoo, and holds Merve, which lies on the high road between Khorassan and Bokhara. It is the
cient Kharism or Charism, and is mentioned by Arrian under the name of the country of the C
rasmii. It contains only two places of note, *New Orgunje* and *Khiva*; the former of which is
commercial capital, the latter the residence of the khan. *New Orgunje* (*Urghendj* or *Ourghen*
stands on a canal derived from the Amoo, about six miles from the river, and has a population of ab
12,000. It is distant from Bokhara about 300 miles W.N.W. *Khiva* is a modern town, about half
size, situate also on a canal, about 60 miles S.W. of New Orgunje; and is the greatest slave mar
of Turkestan. The country of the *Kara-kalpaks*, lying along the Sir, whose inhabitants are nomad
in summer, and stationary in winter, is subject to Khiva, but contains no place of any importan
The people of Khiva carry on the slave trade to a great extent; they make forays into Persia,
seize the subjects of Russia on the Caspian; they supply Bokhara and the whole of Turkestan w
slaves, and are said to possess about 2000 Russian slaves. But while the Khivans are thus robbing
every direction, they grant protections to caravans on payment of fixed duties. The Russian cabi
has long attempted, but without success, to form a connexion with Khiva, not only for commerc
purposes, but for the suppression of the practice of enslaving its subjects. There is great hosti
to Russia in the minds of the Khivans, and it would be most dangerous to appear in the charac
of a Russian in their country. The Russians recently attempted, in the winter of 1839-40, to ma
an army of 20,000 men to Khiva, through the Ust-urt; but, after losing all their camels and ma
men, through the extreme severity of the cold, the wreck of the armament was obliged to return
Orenburg; and, instead of repeating the attempt, the Russian government has been content to en
into a treaty, one condition of which is, that the Kivans shall no more enslave Russian subjects.

Turkmania is the country lying south of the Amoo, or Turkestan Proper, stretching from Kh
to the Caspian, and occupying the space between that sea and the Aral. On the south it is boun
by hills, which are a continuation of the Hindoo-koh, and the Paropanisan Mountains. On the sou
eastern shore of the Caspian, where Turkmania adjoins Persia, the country is mountainous,
watered by the rivers *Gurgan* and *Attruk*, which fall into that sea. In all other places it is a flat
sandy desert, scantily supplied with water. The streams which flow from the mountains are spee
absorbed by the sand, and never reach the Amoo. The largest of these is the *Murghab* or river
Merve, and the *Tejend*, which passes Shurukhs. The country contains no towns or villages, for
Turcomans are an erratic tribe, who wander from one well to another with their herds and flocks, tak
their conical khirgahs or huts along with them. The desert is a vast ocean of sand, flat in some pla
and rising in others into mounds, which, in the neighbourhood of the Caspian, reach the height o
or 80 feet. There is little difficulty in crossing them, and the wells, though few and distant, offer th
supply of water at no great depth from the surface, seldom more than 40 feet. The Turcomans ho
that they rest under the shade of neither king nor tree. They acknowledge the patriarchal sway
their Aksakals (Whitebeards) or elders, and now and then, in some places, fall under the power of
neighbouring nations. The life of a Turcoman is passed in the most reckless plunder of property a
human beings; and a proverb among them boasts that a Turcoman on horseback knows neith
father nor mother. They have fortunately no supreme ruler to guide or direct their united efforts
circumstance which lessens their power and the effects of their barbarity. They belong to the gr
family of the Turkee or Tartar race, and differ from the Usbeeks in being exclusively a nomad
people. They all claim a common lineage, though they are divided into different tribes, to some
which they concede a greater degree of honour than to others. Their total number is reckoned
about 140,000 families. They have neither science nor literature; they are even without mosqu
though not altogether without religion; they are a warlike people, and their domestic habits fit th
for battle. Their food is simple, consisting of the milk and the flesh of their herds and flocks. Th
bestow great care on their horses, which attain a noble perfection in this country, and in the countr
north of the Hindoo-koh. The climate is favourable to the constitution of the animal, and the peo
exhibit the most patient solicitude in its breeding and food; so that its best qualities are fully
veloped. The Turcoman horse is, however, a large and bony animal, more remarkable for strengt
and power than for symmetry and beauty.

In the midst of Turkmania, between Bokhara and Persia, lies the once fertile land of *Merve*,
capital of which is said to have been built by Alexander. It is yet styled *Merve* or *Merú-shah-i-jehá*
king of the world. It long continued a dependancy of the Persian empire, and rose to be a great
opulent country, producing a hundred fold, while its wheat fields furnished three successive cr
from the same seed. Such was its condition, when it was conquered in 1787 by Shah Murad
Bokhara, who destroyed its castle and canals, and forcibly marched the greater part of its people
Bokhara, where they still form a separate community. At a later period the remnant of the populat
was driven into Persia; and this beautiful district, which once presented so striking a contrast to
rest of the country, now partakes of the general sterility, while the Turcomans have usurped
place of its once fixed population. The fields on the verge of the Murghab alone are cultivated, a
here the Turcomans still rear the finest wheat, jewaree, and excellent melons.

RUSSIAN ASIA.

The Russian empire in Asia comprehends several countries and provinces of vast extent, which may be arranged in two distinct portions, the *Caucasian Provinces*, and *Siberia*.

§ 1. *Caucasian Provinces.*

Though the Caucasus has been assumed by modern geographers as the boundary between Europe and Asia, yet, since the countries on both sides of the range form one natural region, and are included in one political government, we have found it necessary, in this particular, to pass the limits of Asia, and intrude on those of Europe. The country we are about to describe has a very irregular outline, and forms a sort of isthmus between the Black Sea and the Caspian. Its northern boundaries are the rivers Kouma, Manytsh, and Kougol-Ieia; the western the Sea of Azov, the Strait of Yenikaleh, and the Black Sea; the southern, Turkish Armenia, the river Aras, and Persian Azerbijan; the eastern, the Caspian Sea; comprising an area of more than 200,000 English square miles. The principal feature of the country is the celebrated mountain chain of Caucasus, which extends across it from near Anapa on the Black Sea to the peninsula of Abcheron on the Caspian, a distance of more than 700 miles, with a breadth varying from about 60 miles to about 120. The highest part of the chain lies to the east of Mount Elbûrz, 43° E., and contains numerous summits which rise above the snow-line (see *ante*, p. 628, 629, and 633); but, in the peninsula of Abcheron, the chain sinks down to the appearance of moderate hills. The culminating point is usually named by European naturalists Elbûrz or Elborus; that, however, is not the distinctive name of any of the summits, but is only the common Circassian appellation of all snow-capt mountains. The proper Circassian name of that lofty peak is *Osha-makhua* (mountain of happiness); the Abbassians call it *Orfeif-Gubô* (heavenly mountain, or mountain of the Great Spirit); and the Tartars, *Ildis-Thagtar* (mountain of stars). All the neighbouring tribes consider it as the residence of the Chin-Padishah, or emperor of the Jins.—(*Spencer's Western Caucasus*, I. 111.) Westward from Elbûrz the chain extends to the north-west, parallel to the shores of the Black Sea, at a distance of 20 or 30 miles, presenting in its eastern portion a series of granitic and porphyritic summits, flanked by shapeless masses of black schist, over which rises a wall of jurassic limestone, to the height of 7000 or 8000 feet (French), cleft by deep ravines, through which the collected waters flow. Advancing from Colchis it is still separated from the sea by a uniform plain 7 or 8 leagues wide, which runs along its base for a space of 30 leagues, becoming gradually narrower, as far as the height of Gagra, where the jurassic wall approaches the sea with its full elevation, leaving only a pass nearly as narrow as the Grecian Thermopylæ, which is a sandy flat, in some parts only fifty feet wide. Farther west the summits decline in elevation, and change their geological character; the black schists and the jurassic limestone are gradually concealed beneath the waves of the Black Sea, or under vast beds of a chalk formation, which here terminates the Caucasus. There are no longer peaks white with snow; but, in their stead, low, round, wooded hills are found ranging along a deep sea coast, cut into a multitude of narrow lateral valleys, which are watered by unnavigable streams. The sea itself is bordered by a long series of white or grey shelving rocks, which are lashed by its waves.—(*M. Dubois; Bulletin de la Société de Geographique, Paris, Avril* 1837, p. 240.) The Western Caucasus is named by the Circassians *Kuschkaa*, and by the Russians *Chernigori* (black mountains), from their being densely covered with forests; and to distinguish them from the lofty snow-capt range, of which Elbûrz forms the principal peak. Towards the banks of the Kouban the mountain valleys open into a plain, a considerable part of which is covered with forests, while the acclivities, glens, plains, and river banks are embellished with cypresses of the growth of centuries, palm-trees, plantains, maples, elms, firs, alders, and poplars. The right or northern bank of the Kouban presents a very different scene, and contains a tract as wild, desolate, and woodless, as the mind can conceive. The soil of the mountain valleys is rich and well-watered, and wants only human industry to render it highly productive. At present, however, a great portion of it is overgrown with wild herbs, and is used only for pasturage. The same description, indeed, will apply, with little variation, to the country farther east, along the whole range of the mountains. To the north of the Kouban and the Terek extends a wide plain, containing scarcely any elevation which deserves the name of hill; and the watershed of the country between the two seas rises probably no higher in its northern part than 120 feet above the level of the Black Sea. The western part of this plain is intersected by ravines, in which flow small streams; it contains not a single tree, but is covered with excellent grass, interspersed with beautiful flowers. The eastern portion, from the Terek to the Volga, is a saline, sandy, and barren steppe, occupied by a few wandering Tartars, and exhibits every appearance of having formerly been a part of the bed of the Caspian Sea. Along the Caspian, southward from the mouth of the Terek to the point of Abcheron, lies the *Daghestan* (hill country), which consists of a numerous succession of hills and valleys, formed by the offsets of the Caucasus. Its south-western border is the main range itself; but the northern part of its western border consists of a long offset, which divides the bed of the river Koisou, which flows north, from the smaller streams that flow directly east to the Caspian.

The southern slopes of the Central and Eastern Caucasus subside into two great valleys or river basins; the one, extending 330 miles north-west from the Caspian sea, with a mean breadth of about 75 miles, is drained by the river Kûr and its numerous affluents; the other extending only about 120 miles from the watershed, westward to the Black Sea, is drained by the river Rioni and its affluents. The mountains of Karalini, which form the watershed between these great valleys, are of comparatively small elevation, and rise only to 6000 feet; but, as the range extends westward, along the southern side of the basin of the Rioni, towards the mouth of the Choruk, under the name of the mountains of Akhaltsike, the summits reach in some places an elevation of 10,000 feet. The southern side of the basin of the Kûr is formed by a high mountainous country, which contains in its bosom the great lake Gûkcha or Sivan; and one of the summits, Ali-Ghuz, rises to the height of 12,000 feet. To the south of these mountains we find the long narrow valley of the river Aras, which forms, throughout the greater part of its course, the boundary between the Russian and the Persian territories. Towards the mouth of the river the boundary line diverges from it, crossing the desert of Mogam or Mogan, and extending southwards along a ridge of heights, which form the watershed of the small streams that flow to the Caspian, and ending on the shore near Astarah or Fort St. Nikolaia, 60 miles S. from the mouth of the Kûr.

The Caucasus forms an immense wall between the northern and the southern portions of the country. There are, however, several passes across the range, the most celebrated of which are the *Pass of Dariel*, in 45° E. long., believed to be the Caucasian pass of the ancients; and the *Albanian Pass* of antiquity, which is generally supposed to be the road that now goes along the shores of the Caspian Sea, by Derbent and Bakû, though Malte Brun affirms it to be that which now proceeds along the

banks of the Koisou, crossing the mountains to the eastward of Mounts Tersh and Kara-kia, in 45° 20′ E. long. From the fortress of Vladikaukas, on the Terek, the Pass of Dariel extends southward along the banks of that river, reaching the height of 9000 feet, from which it again descends to the fort of Passanaour, erected for the protection of travellers, and thence proceeds along the valley of the Aragbor river to Teflis. Between Passanaour and the fort of Kasibeg, on the northern side of the summit, the mountains rise several thousand feet above the pass, and in some places the road runs along the edge of an abyss, which seems to be as deep as the mountains above it are high; while the difficulties of the traveller are often increased by the fall of avalanches, or the sudden swelling of the mountain torrents. The other passes are comparatively unimportant; that by Derbent is little frequented, for, though it does lie over high mountains, it is everywhere interrupted by numerous torrents which often overflow their banks, and render travelling dangerous. The rivers are few, and comparatively unimportant. The *Kouban* (ancient Greek *Hupanis*, Latin *Hypanis*), rises in a valley between Mount Elbûrz and the main chain of the Caucasus, and flows first north-west, and then west to the Black Sea, which it enters a little to the east of the Strait of Yenikaleh. It receives all the waters that pour down from the northern valleys of the Caucasus, between Mount Elbûrz and the Black Sea; the length of its course is about 480 miles. The *Terek* rises from the foot of Mount Kazbek, flows first north through the lower northern part of the pass of Dariel, then north-west till it join the Malka, where the united stream turns nearly due east, and enters the Caspian Sea by a number of mouths. It receives all the waters between Elbûrz and the valley of the Koisou, and has a course of more than 300 miles. The *Kouma* rises from the northern side of Elbûrz, flows first northerly, and then east towards the Caspian, which it formerly reached after a course of 320 miles; but it is now absorbed by the sands before it reach the sea, its empty channel being still visible for about 100 versts. The *Manytsh* has its origin in a number of small lakes or marshes to the north of the Kouma, flows north-west, forms the large lake *Bolchoilmen*, and falls into the Don near Tscherkask, in the country of the Don Cossacks. The *Kûr* (*Kurus* of the Greek, and *Cyrus* of the Latin geographers) rises in the Turkish eyalet of Kars to the north-west of the city of the same name. It flows first in a north-easterly direction, till it reaches the slopes of Caucasus, which turn it to the south-east, a course which it continues till it enters the Caspian. Its course is 550 miles. The *Aras* (*Araxes* of the Greeks and Latins), a larger river than the Kûr, rises from the Bingoldagh, 35 miles S. of Erzroum, and flows easterly, south-easterly, and then north-east, into the Kûr. These two rivers receive considerable affluents from both sides of their respective valleys, and, in the lower part of their courses, form or communicate with a long string of lakes and swamps, which appear to have formed, at one time, a part of their bed. The *Rioni* (*Phasis*) rises to the south-east of Elbûrz, and flows to the Black Sea, collecting the waters of the southern slopes of Caucasus between the 42d and the 44th meridians. Its principal affluent is the *Ziroula*, from the eastern part of the valley.

This region, except the portion to the north of the Kouban, which is part of the Government of Taurida, forms one general government of the Russian empire; the governor-general of which has his residence at Teflis, the capital of Georgia. It includes several ancient kingdoms, states, and provinces, whose names and people have acquired historical celebrity; and these it is necessary to consider as still the proper geographical divisions of the country, though the arrangements of the Russian Government may be different. The ancient divisions are, 1. *Georgia*. 2. *Shirvan*, *Shirvan* or *Guirvan*. 3. The Russian portions of *Armenia* and *Azerbijan*. 4. *Imeritia*, *Mingrelia*, and part of *Gûriel*. 5. *Abassia*. 6. *Circassia*. 7. *Daghestan* and *Leghistan*. 8. The old Russian province of *Caucasia*, comprehending the country between the Kouma on the north, and the Upper Kouban and the Terek on the south and west.

1. GEORGIA (the Persian *Gurgistan*, the Russian *Grusia*, and the Turkish *Gurthi*) though formerly of greater extent, may now be considered as comprising the north-western or upper portion of the basin of the Kûr, and is about 240 miles in length, by 120 in breadth. The Kûr flows nearly through the middle of it, carrying all its surplus waters to the Caspian. The country presents an agreeable variety of mountains, forests, and plains, enjoys a very mild temperature, and is in general very healthy. The people cultivate wheat and millet; peaches, apricots, almonds, quinces, cherries, figs, and pomegranates, flourish with very little care. The vines are abundant, and of good quality; but the wine is not well made. Apples, madder, and cotton are also cultivated. The people boast of their management of bees; their horses and beeves equal the best European breeds in size and beauty; and their long-tailed sheep afford excellent wool. The finest oaks and firs are suffered to rot without being applied to any use. The Georgians speak a language radically different from every other known tongue; but they believe themselves to be descended from the same stock with the Armenians. They are generally handsome, well made, and active; and possess good natural abilities, but are selfish, and addicted to drinking. The beauty of their women is not less celebrated than that of the Circassians, though their skins are not so white, nor their figure so graceful; and many of them are, or used to be exported to Persia and Turkey, for the supply of the harems. Many of the Georgians live in huts half concealed in the ground; but in the more civilized parts of the country are found houses formed of a slight wooden frame, walls made of bundles of osiers, covered with a mixture of clay and cow dung, and surmounted by a roof of rushes. In almost all the villages there are towers, built to serve as asylums for the women and children against the attacks of the Lesghis. About two-thirds of the people are proper Georgians, attached to the ritual of the Greek Church; Armenians and Jews are also numerous. Georgia was formerly a feudal monarchy, subdivided among princes and nobles, the former of whom paid no contributions, but were obliged during war to follow the king with their vassals. Their lawsuits were also decided by the king. The nobles paid certain taxes to both the king and the princes; and although they dwelt in thatched cottages, their pride was equal to their poverty and their ignorance. Under these rulers the people lived in the most abject slavery; they were sold, given away, or pledged, like domestic animals. All who were capable of bearing arms were soldiers; each noble commanded his own vassals, but the king named the commander-in-chief. The king's revenues consisted of the fifth part of the produce of the vineyards, fields, and gardens; with duties on all exports and imports, as well as the produce of the mines, which were but slightly worked. Georgia being protected by mountains, escaped the great Tartar devastations; but for the last three centuries, it has been the scene of almost continual warfare; and, though now under the regular government of Russia, it has experienced so little improvement that its public revenues are not sufficient to defray the necessary expenses.

Teflis, *Tiflis*, or *Tibilisi*, the capital, stands nearly in the centre of the country, on the right bank of the Kûr. It was destroyed in 1796 by Aga Mahommed Khan, the King of Persia, but has been gradually rebuilt, with considerable taste; the remaining portions of the old town are ill built, and contain narrow and irregular streets. The houses of the richer classes alone have glass windows; the poorer people are content with oiled paper. In the new town, however, there are wide streets, fine squares, large barracks, well-managed hospitals, vast caravansaries, and large and fine buildings for the accommodation of the governor and his assistants and deputies. Among the older buildings the cathedral is remarkable for its antiquity, its extent, and its architecture; and the ancient citadel, which is built on a high rock, presents an imposing mass of ruins. Teflis is the residence of the governor-general of Caucasus, and of a Georgian and an Armenian archbishop; it possesses a gymnasium, a seminary, several schools, and a botanic garden; it has also four newspapers, which are published in the languages of Russia, Georgia, Persia, and Armenia respectively. There are also eccle-

brated warm baths, for which water is collected from springs in the neighbouring hills, and is said to possess considerable medicinal virtue. The inhabitants are somewhat industrious, and carry on a considerable trade; but their number, even including the large Russian garrison, does not amount to 30,000. Lat. 41° 41′ N., long. 44° 50′ E. The other principal towns are *Doucheti*, 27 miles N. by W. from Tefils; *Gori*, 45 miles N.W.; *Ganjah* or *Elizavetpol*, 90 miles S.E.; *Telavi*, 35 N.E. by E.; *Signakh*, 56 miles E. by S.; *Akhaltsike* or *Akiska*, 110 miles W. of Tefils, which was formerly the capital of a Turkish pashalic, and contained 40,000 inhabitants, but now contains only about 13,000, mostly Armenian emigrants from Turkey, who have not yet fairly established themselves. It contains several fine churches, and ruins. At *Hertwis* or *Khartous*, 50 versts (33 miles) S.E. of Akhaltsike, where the Trapovanie and the Kûr form a junction, the country is completely volcanic. For a distance of five miles up the Kûr, every rock is composed of a series of volcanic blocks, with layers of solid lava, from 20 to 100 feet in height, resting upon them. The traveller next reaches a circular valley, five or six versts in diameter, through a narrow rent in which, 50 or 60 feet deep, the river flows. In this quarter small balls of volcanic ashes are incessantly thrown up in every direction; which issue from the side of an oval lake from 400 to 600 feet in length, and of fathomless depth, situate in the midst of wild sterile blocks of lava; the surface of its water is 50 feet above the Kûr, which runs close past it. Beyond this lake the Kûr continues to flow among volcanic rocks; at the top of which, 1000 feet above the river, stands the large fortress of the Armenian Queen Thamar; and at the distance of four or five versts from the entrance of the crater, is her favourite place of residence *Warzich*, a most extraordinary spot. It is a complete city, hewn out of volcanic stone; and contains, among other works, three large churches, entirely cut out of the rock, subterraneous passages several versts in length, innumerable chambers, some of them finely sculptured, and Queen Thamar's summer and winter palaces.

2. SHIRVAN was formerly a province of Persia, but of very uncertain limits; its northern boundary was sometimes fixed at Bakû, and sometimes considered to extend as far as Derbent. In its restricted acceptation, it comprises the lower part of the basin of the Kûr, between that river and the mountains; its climate and natural productions are very much the same as those of Georgia. It consists chiefly of a fertile well-watered plain, which produces plentifully cotton, rice, wine, and fruits of various kinds; but along the shore of the Caspian there is a flat tract which is nearly desert. The inhabitants are chiefly Mahometan Persians. The peninsula of Abcheron, though hilly, contains no summit exceeding 1000 feet. The soil is rocky and barren, and its only water is brackish, and is obtained from wells. There is not a tree in the peninsula; but portions of the territory have a layer of mould, on which wheat, barley, and maize, melons, and other fruit, rice and cotton, and, on the higher ground, saffron, are raised. The soil is saturated with naphtha, from which gas is profusely exhaled. It not only streams spontaneously through the surface, but rises wherever a hole is bored. It is of two kinds, black and white, and its principal sources are about six miles from Bakû. The black oil shines with a reddish tint in the rays of the sun, and is used for burning, and for coating roofs. Not far from the same spot a stream of white oil gushes from the foot of a hill; it readily ignites, and burns on the surface of water; and in calm weather people amuse themselves with pouring it in quantities into the sea, where they set fire to it, and it floats away, giving the waters the appearance of a sea of fire. The poor people of the neighbourhood obtain a cheap light, and fire for cooking, by driving a clay pipe or a hollow reed into the ground, and burning the gas which rises through it. The Persian ghebers, likewise, send the gas in bottles to their friends at a distance. The burning field, near Bakû, is a hollow expanse, full of clefts coated with white sand and grey dust, and abounding with particles of sulphur. Some of the clefts are seen burning, some smoking, and others emitting only vapour. There is also, not far from the town, a boiling lake which is in constant motion, and emits a flame without heat. Occasionally the whole region seems to be on fire, as it rolls along the hills in enormous masses, and with incredible velocity; but this fire does not burn, and it is impossible to detect in it the smallest heat. In ancient times this burning field was one of the most celebrated ateshyahs or shrines of grace among the ghebers or fire-worshippers of Persia; a spot to which thousands of pilgrims resorted to purify themselves from sin. A few of them still find their way to it, and spend such a portion of time, five, seven, or ten years, as they think necessary to acquire for themselves the character of sanctity among their countrymen. Pilgrims come even from India to visit this sacred spot. The peninsula is likewise celebrated for numerous volcanoes which discharge immense quantities of mud.

Bakû, the capital, is situate at the south-west corner of the peninsula of Abcheron, where the sea is land-locked by two islands, which render the roadstead a safe anchorage, even close to the shore. The town is walled, and built on a declivity, the top of which is occupied by an old palace of the kings of Persia. The streets are narrow and winding, and the population amounts only to about 3500 or 4000. The exports consist of naphtha, saffron, cotton, silk, opium, rice, and salt. The district of the town contains 35 villages, with 19,000 inhabitants, of whom 1000 are Turcomans.

To the south of Shirvan, and divided from it by the Kûr, the Russian territory includes a portion of the Persian province of Ghilan, called *Talish*; but there are no towns, or other places, of the least importance.

3. The Russian portions of ARMENIA and AZERBIJAN lie between Georgia on the north, and Mount Ararat with the river Aras on the south; being together about 200 miles in length from N.W. to S.E., and 130 in breadth. The country consists of a mass of mountains which form a congeries of volcanic amphitheatres, and here, as well as to the south of the Aras, crowding upon each other, fill up the whole space between the Black Sea and the Caspian. One of the largest of these amphitheatres is occupied by the most remarkable feature of Russian Armenia, the great freshwater lake *Gûkcha* or *Kûkcha* (properly *Gokcheh-derya*, the blue lake) called also *Sivan* or *Sevan*, the surface of which is 5300 feet above the level of the sea. Its greatest length, according to Colonel Monteith, who travelled round it, is 47 English miles, while its breadth varies from 6 to 21; but according to the late Russian trigonometrical survey, as reported by M. Dubois, its length is only 15 French leagues (41½ English miles), and its breadth 8 leagues (21½ miles). In the north-western portion of the lake is an island called *Sevan*, with a monastery, 1200 yards from the shore. In his passage across this strait, Colonel Monteith lost soundings with 400 feet of line soon after pushing off, and the lake had the dark blue appearance of deep water.—(*Journal R. Geog. Soc. Lond.* III. 40.) A branch of the river Zengue, which passes Erivan, carries the surplus waters of the lake to the Aras. The lake is entirely surrounded by extinct volcanoes, and by jets of various trap rocks and porphyries which yield small streamlets of water during the spring months. Immediately to the north-west, but politically within the limits of Georgia, lies another great volcanic amphitheatre, that of *Somkheti*, which has no lake, but contains immense beds of lava and obsidian. The western border of this region, and of the Russian territory, is formed by the *Arpa-Chai* (barley river), which, according to Colonel Monteith, invariably presents the same feature of flowing in the deep bed of a basaltic ravine, with numerous ruined castles, perched on abrupt rocks, till near its junction with the Aras; but according to Smith and Dwight (*Missionary Researches in Armenia, &c.* London, 1834, pp. 102, 269), it presents at the place where they crossed it, at Gûmri, not the shadow of a barrier to the advance of an army. In their journey eastward they had entered a different empire almost before they were aware of it; as both banks of the river presented the same features of plain and gentle undulation, and the river itself was easily forded. Gûmri, however, has since been fixed on as the site of a Russian fortress. Waving fields of barley on its eastern bank, interspersed with meadows, attracted their attention before they knew they had crossed the boundary. The beautifully limpid water, scattered widely in artificial

canals, gives extreme fertility to a broad tract of land, which is well peopled, and presents an animated scene of villages, some of which appear to be large. The north-eastern part of this region, occupying the angle formed by the Kür and the Aras, above their confluence, is called *Karabaugh* (black garden), from the extreme fertility of the black alluvial soil of the valley of the Kür which it embraces. The rest of it is mountainous, and, in general, well wooded with a variety of forest trees; but in the heart of the mountains which form the walls, as we may call them, of the two river valleys, is an extensive table-land entirely destitute of timber.—(*Smith and Dwight*, 223-225.) Its waving surface, however, is arable, and cultivated with grain throughout in long narrow fields without fences; but, as there is no means of irrigating the soil artificially, the produce is scanty, varying from one to five fold, and four fold being the average crop. The table-land is intersected by numerous ravines of great depth, whose precipitous sides bristle with numerous slender cones, each capped with a rock occasionally several tons in weight, judging from their size, and forming the beds of streamlets of the purest water. The southern border of this table-land is formed by a high mountain ridge which sinks abruptly on the opposite side down to the Aras, which forms, as already mentioned, throughout the greater part of its course, the limit of Russian Armenia. Its valley is much narrower than that of the Kür; and the low grounds along its banks are in many places swampy for miles in succession. The lower part of its course is through a succession of defiles; and below Ouradabad the stream forces its way through a great chain of mountains, where a road has been made which even now scarcely admits of a loaded mule passing on either bank. Basaltic and volcanic rocks form everywhere the prevalent mineralogical features of its channel; but in a valley four miles below its junction with the Arpa-chai, are situate the salt mines of *Kulpi*, which have for many ages supplied Georgia and even the Caucasus with that necessary article. The salt is so abundant that hitherto it has not been necessary to sink deep. A range of hills bordering the valley on the east side appears to be entirely composed of salt, in the sides of which numerous excavations have been made. The soil of the valleys of the Aras appears to be extremely fertile, but, except in the lowest plains, nothing is produced without continual irrigation; and wherever a canal cannot be made to reach, not only is there no crop cultivated, but even grass seems scarcely to grow, and unsightly saline weeds, covered with thorns, increase the appearance of general barrenness. If it be true, as some have imagined, that we are here to look for the site of Eden, certainly on no part of the earth is the primeval curse more palpably inflicted than on the original paradise. No where is it more true that man eats bread in the sweat of his brow, and nowhere are thorns and thistles more spontaneously produced. The mountains around, instead of being covered with trees, as in the Karabaugh, or clothed with verdant pastures, as at Erzroum, present only forbidding precipices of rock or of earth, apparently without even a blade of grass. The whole scene of valley and mountain affords not a tree, except in the immediate vicinity of the villages.—(*Smith and Dwight*, 270.) Directly south of Erivan a small portion of the Russian territory extends to the south-westward of the Aras, and in the south-west corner of this portion stands the famous mountain *Macis* or *Agri-Dagh* or *Ararat*. Its peak rises to the height of 17,265 English feet (2700 toises, by Parrot's measurement); M. Dubois makes it 16,254 French feet; and the smaller peak he makes 12,162. Sixty miles N. by W. of Ararat the mountain Ali-Ghux rises to the height of 12,000 French feet, capped with perpetual snow, and forms the northern termination of a superb garland, as M. Dubois calls it, of extinct volcanoes which enclose the basin of *Ararat* or central Armenia, over the whole circumference of which nothing is to be seen but black and grey lava currents, with pumice or obsidian, along with scoriæ and basalt, or trass, intermixed with porphyries and melaphyres. In July 1840 Ararat, after long quiescence, again burst forth as a volcano, and did immense damage to the neighbouring country.

Erivan, lat 40° 9′ 30″ N., long. 44° 33′ E., the capital of the province of Russian Armenia, is situate in a rugged valley, on the east bank of the Zengue or Zenghi or Zengy river, the outlet of lake Gökcha. It is a small city without walls, but has good houses, and contains about 1800 Moslem, and 700 Armenian families, or about 12,000 inhabitants. The citadel is at the distance of about a quarter of a mile to the south, and is almost a distinct town. Surrounded on the north by arid mountains, which concentrate the sun's rays, the climate of Erivan is extremely hot in summer, and proverbial for intermittent fevers and liver complaints. The soil, however, is extremely fertile, and Erivan is not less famous for its fruits than for its diseases. All the sunny hills which border the valley are covered with vines. Some places are so warm as to allow them to remain exposed to the air all the winter, but generally they are slightly covered with leaves or straw during that season. The melons and apples are also uncommonly fine. The trade of the place seems to be in a languishing condition; and the population is said to be declining since the Russian conquest. About 12 miles west from the city is the convent of *Etchmiadzin*, the ecclesiastical capital of the Armenians, and the residence of their catholicos or spiritual primate. It is surrounded by a high wall, flanked with circular towers, which give it externally the appearance of a fortress; within, it is a city in miniature, containing an ancient church, rebuilt A.D. 618, and other buildings. *Nakhcheran* or *Nakhchiva*, 80 miles S.E. by E. from Erivan, claims the honour of being the oldest city in the world. Armenian etymology shows that the name signifies "first place of descent;" and tradition affirms that Noah fixed his residence here after descending from Ararat. The city was almost entirely ruined during the last war, and is not yet recovering. Around it are numerous gardens of extreme luxuriance, which produce abundance of quinces, pears, apples, melons, pomegranates, grapes, and almonds; but, like Erivan, Nakhchevan is as noted for its sickliness as for its fertility, though it is situated about two fursukhs, or 8 miles, from the Aras, on a higher level than the alluvial and marshy plain which borders the river. Twenty miles, in a straight line, farther down the Aras, and at the south end of a strong defile, is *Julfa*, an ancient city, destroyed by Shah Abbas the great, who carried its inhabitants to Ispahan, where the suburb which they occupied still bears the same name. About 20 miles north-west of Nakhchevan, is the supposed site of *Artaxata*, an ancient capital of Armenia, destroyed by the Roman general Corbulo, in the reign of Nero. *Valarsapat* or *Vagharshabad*, another ancient capital, now a village of about 500 mud cabins, stands close by the walls of Etchmiadzin. There are several other ruined cities in different parts of the province. *Shousha* or *Chouchi* (in Armenian *Shoushi*), the capital of Karabaugh, 124 miles E. by S. of Erivan, is a mountain fortress into a natural castle, surrounded by very deep precipitous ravines. The town contains about 200 houses, built of stone, frequently two stories high, and open to the street.

4. IMERITIA, MINGRELIA, and that part of GURIEL within the Russian territory, occupy the whole basin of the Rioni; the northern border being formed by the Caucasus, the eastern by the mountains of Kartalini, the southern, by those of Akhaltsike, and the western, by the Black Sea. The mean length is above 120 miles from east to west, and the greatest breadth, at the 42° meridian, above 90. The soil is extremely fertile, but little cultivated, and the country is covered throughout with thick forests. Owing to this last circumstance, as is supposed, the climate is so humid that it rains from 120 to 150 days in the year. The lower part of the country, near the sea, is a dead unvaried flat, full of swamps and marshes, producing a constant miasma, the fertile source of pestilential fevers. The people are of the Georgian race, and amount only to about 150,000. Imeritia is directly under the Russ an government, but Mingrelia and Guriel still have their respective princes, who acknowledge the emperor's supremacy, but even their countries are filled with Cossack police stations; and the insecurity to person and property, so vividly described by Chardin, who passed through the

country in 1672, has given way to perfect quiet and security. Decided measures have been adopted, with success, to restrain the sale of slaves, and the condition of the peasantry has been greatly improved. Still, with the exception of a few merchants, the population is divided into only two classes, the nobility and the slaves, the former being the owners of the land, and the latter performing all the work. But as the noble can no longer deprive his serf of his life or limbs, nor sell him to a foreign master, slavery has assumed a somewhat milder form; and the master and slave live together on almost equal terms. Some of the nobles can read a little Russian, but they are unacquainted with their own language. Drunkenness prevails to an incredible extent; and scarcely any limits are set to unchastity in its most offensive and sinful forms. The sacredness and validity of an oath are unknown.

K'houthaissi, Kotais, Kotatis, Coutais, or *Koutais*, the capital, stands on the Rioni, in an unhealthy situation, where the river first reaches the plain, nearly in the centre of the province. It is a small town with about 1600 inhabitants, nearly one-half of whom are Jews. The split and naked rocks which rise above the town are covered with ruins of every description, temples, churches, bridges, aqueducts, towers, &c. overgrown with ivy, brambles, and pomegranate bushes, being all that remains of the ancient city *Cyta* or *Cutaisium*, the birth-place of Medea, so celebrated in classic mythology for her share in the success of the Argonautic expedition. *Poti*, a fort near the mouth of the Phasis, on the Black Sea. *Redout-Kaleh*, a small fortified town, about 10 miles north from the Phasis, on the coast. The roads are unsafe, and there is no harbour. It occupies an unhealthy situation, and owes its existence to the commercial privileges granted in 1821, for ten years, to the Transcaucasian provinces. While these privileges existed, the merchants of Teflis, who visit the German fairs, used to send their purchases, generally by way of Odessa or Trieste, to this port; but in consequence of the restrictions and prohibitive duties since imposed by the Russian government, the trade has been transferred to Trebizond, and Redout-Kaleh is now almost deserted.

5. ABASSIA or ABKHAZ lies along the north-east coast of the Black Sea, between the shore and the summits of Caucasus, being about 260 miles in length and less than 30 of average breadth. It is also called the *Great Abassia*, to distinguish it from another region named the *Little Abassia*, on the northern side of the mountains, towards the sources of the Kouban. The country is fertile though very mountainous; very moderate labour produces rich crops, and the herds of cattle are numerous and productive. It is possessed by wild independent tribes, who have set the Russian power at defiance; and though the Russians mark on their maps nearly half the country as subject, yet their authority is in reality acknowledged no farther than their arms can reach. The Abassians were formerly well known as pirates on the Black Sea. Many of them used to prosecute their fortunes in Egypt, where they rose by their bravery to eminent military rank: the greater number of the Mamelukes were natives of this country. Their women are beautiful, and much sought after in Turkey, where they generally pass for Circassians. The chief towns and forts are: *Anapa*, a small town and fortress 45 miles S.E. by E. of the Strait of Yenikaleh, which is in possession of the Russians. It was formerly the chief emporium of the Turkish trade with the Caucasian tribes, and from it the Georgian and Circassian slave girls were supplied. *Soujouk-kaleh*, a ruined fortress occupying an important position on a splendid bay which affords safe anchorage, 25 miles S. by E. of Anapa. *Ghelenjik*, 16 miles farther S.E., is a Russian fort formed of intrenchments and palisadoes mounted with heavy guns, and contains a garrison of 2000 men. It has one of the best harbours in the Black Sea. About 15 miles farther S.E. is the bay of *Pshad* or *Pshiate* (French *Pchad* or *Pchiate*), where the Russians are said to have lately (1837) erected a fort. *Vadran*, 50 miles S.E. of Ghelenjik, is also occupied by a fort. *Pitzounda*, 80 miles S.E. of Vadran, where the Russians have a fort, two miles from the coast, to which, says Spencer, the road leads through a forest of splendid trees of oak, beech, and chestnut; with wild olives, figs, and pomegranates in full bloom, and vines of enormous growth wreathed from tree to tree. *Soukgoum-kaleh* or *Souchom-Kaleh*, 30 miles S.E. of Pitzounda, and in the south-west angle formed by the intersection of the meridian 41° E. with the 43° N. lat., is a miserable spot, more fatal than any other to the Russian garrison. When in possession of the Turks it is said to have contained a population of 3000; but it has now decreased to little more than a dozen of wretched huts, inhabited by a few Greeks and Armenians. There is also a square fort in a very dilapidated state, but fully mounted with cannon.

6. CIRCASSIA extends along the north side of the Caucasus, from the sea of Azof to the Upper Terek; but, by the gradual progress of Russian encroachment, the independent Circassians are now restricted to the comparatively small region which lies between the Kouban and the mountain tops, forming something like a triangle of 220 miles in length from east to west, and 120 in its greatest breadth. It comprises the northern declivities of Caucasus, and sinks into a flat towards the banks of the Kouban. It is possessed by a wild people who call themselves *Adeches* or *Adekhes*, a name denoting a mountain ravine on the sea; but their neighbours, the Nogai Tartars, call them *Tcherkesses*, a name which well expresses the ferocity of their disposition, being derived from *tsherk*, to cut off, and *kes*, the head. From this Nogai word is derived their European name of Circassians. They are divided into ten tribes, whose habitat cannot be specified, as they often change their residence; their character even, and condition are continually fluctuating according to the character and circumstances of the settlers who come among them. These tribes bear the names of certain rivers or districts, or of individual founders, and number altogether, it is said, about 272,400 males. The only class of society is the military; every head of a family being obliged to protect, as well as to cultivate, his own property. Among some of the tribes, however, there is a sort of nobility, destitute of privilege or influence. Some have slaves, who are not natives, but captives in war, or purchased strangers. In former times the Circassians were governed by despotic princes; but, since 1769, the government has been vested in a sort of senate, or council of elders. Of these assemblies, there is one in every subdivision of a tribe, but their deliberations must be confirmed by the general assembly of the people, which often overrules the decisions of the council. This state of things gives rise to continual bickerings, animosity, and deadly hatred among the tribes. In religion the Circassians are Mahometans; in respect of moral character, they are a set of lawless plunderers, who respect only those of their own tribe or lineage. The adjoining provinces can never prosper, while they have such neighbours as these, who are ever ready to harass, and rob, and murder the peacefully disposed citizens; and it is therefore the interest, if not the duty of the Russian government to extirpate or subdue them. In external appearance, however, the Circassians are a remarkably fine race, and their women are reputed the most beautiful of the Caucasians. Their houses are formed of hurdles covered with clay, and thatched with straw. Forty or fifty of such huts, arranged in a circle, form a village, in the centre of which the cattle are placed for safety during the night. Their horses, which are considered inferior only to those of Arabia, roam freely in the fields, without ever entering a stable. Their agriculture is in a state of primitive simplicity; but the great fertility of the soil makes up for their want of skill or industry. The management of bees is an important part of their rural economy. The Circassian language differs much from those of the other Caucasian tribes. It is never written; and when a Circassian has occasion to send a letter, he applies to his mollah, who writes it for him in the Turkish tongue. The original country of the Circassians is also called *Kabardah*, which is divided into two portions, the Great and the Little; the former comprising the basin of the Kouban; the other, the upper and the middle parts of the basin of the Terek.

7. DAGHESTAN and LESGHISTAN, comprise the mountainous country which lies between the west coast of the Caspian Sea, and the summits of the eastern Caucasus, as far west as the Koisou; and

extends into Georgia as far as the Alazan, an affluent of the Kur. Along the coast Daghestan extends from the Terek to Alty-agatch, a distance of 250 miles, while its greatest breadth, between the sea and Mount Terek, is about 70. The north-eastern part of Lesghistan is included in this measurement; but its southern portion extends beyond it down the southern slopes of the mountains. As the name implies, Daghestan is the country of mountains; but the soil is extremely fertile, and the climate is mild. The territory of *Kouba*, in the southern part of the province, has been called by the Persians, the paradise of roses; and in some parts of it, the vine may be seen shooting from every cleft of the rock. But these fine regions are subjected to excessive humidity; and are in several places infested with reptiles and pernicious insects. Daghestan abounds with rivers, which, as their courses are very short, are scarcely worth naming. The largest of them is the *Kasoui*, which flows into the *Gulf of Agrakhan*, after a course of 150 miles. The *Samour* has a course nearly as long, and discharges its abundant waters by ten or twelve mouths, between lat. 41° 50' and 42°. The inhabitants of the lowlands of Daghestan are a mixed race descended from Persian, Arabian, Syrian, Turkish, and Tartar colonists, mixed with the aboriginal Caucasians. The mountains are inhabited by the Lesghis, the most predatory and ferocious of all the Caucasian nations; who appear to have been established in this region from time immemorial, and are mentioned, not only in the ancient chronicles of Georgia, but even by Strabo and Plutarch. They are considered as among the bravest of the Caucasians, and are always ready to serve as mercenaries in the wars of their neighbours; their fidelity may be relied on as long as they are regularly paid. The majority of them are now Soonee Mahometans, but a few faint vestiges of Christianity may also be traced among them. The weak bonds of society are held together only by hospitality and the law of retaliation. They used to be the terror of all the surrounding provinces; and they so perseveringly and successfully resisted the power of Persia, as to give rise to the proverb, "If a king of Persia is a fool, let him march against the Lesghis." They were, however, at last driven, in A.D. 1742, by the arms of Nadir Shah, to seek protection from Russia, and swear allegiance to the Czar; they now pay a small tribute of silk or money, and the influence of Russia is effectively felt in the election of their rulers. But they are still even worse than the Circassians for their predatory habits and blood-thirstiness. The Russians for a long time, instead of residing and having military posts among them, stationed troops along their frontiers, to prevent them from pillaging the adjacent districts; and the country used to be a sort of asylum for refugees from Russian justice or oppression; but Marshal Paskewitsch is said to have lately reduced some of the tribes to absolute subjection. The Lesghis are divided into numerous tribes, whom the nature of their country keeps so isolated, that no such thing as a general confederacy or national union seems ever to have been known among them. Their language has no analogy with any known tongue except that of the Samoiedes, to which it has a distant resemblance. It is divided into numerous dialects, which Guldenstædt has endeavoured to arrange into eight classes, each comprising the speech of several tribes. The first of these is the *Avar*, which comprises the *Avars*, and fourteen other tribes resembling them, who all dwell in the north-western parts of Daghestan. The Avars themselves occupy the upper valleys of the Koisou, and their khan, the most powerful prince of the eastern Caucasus, resides at Koun-dzakh, a large village, where he has a spacious mansion, with glazed windows. The king of Georgia used to pay the predecessors of this khan about £1000 sterling a-year, as black mail, to save his subjects from Lesghian ravages; the Russians now pay him a pension of about £1600, in consideration of which he always acts in subservience to their wishes and directions. The Avars are believed to be the remains of the Avars or Huns who took refuge in this part of Caucasus. The only other tribes worthy of notice are the *Akushas* and the *Kubashas*, both comprised in the fifth of Guldenstædt's classes, and the *Kasi-Coumyks* (or *Koumooks*), who form the seventh. The *Akushas* dwell on the Koisou, and form a republic, composed of about thirty villages. They have neither princes nor nobles; but are divided into twelve tribes, each of which has a chief, who possesses, however, no power to command, but only that of advising. They sell their services to the highest bidder, and will fight against any other tribe except the Shumkhal of Terki, whose supremacy they formerly acknowledged, and who permit them, without remuneration, to graze their flocks on the rich meadows along their frontier. The *Kubashas* also live near the Koisou, in a large town of the same name, with eight dependent villages. They call themselves Franki, on which account they have been supposed to be of Venetian or Genoese origin; but they resemble in every respect the other Lesghis, and their language is a dialect related to the Akushan. They are known throughout the East as the Zer-kherans, or makers of coats-of-mail; they manufacture splendid arms, and fine cloth or shawls, which are highly prized, not only in the Caucasus, but even in Persia, and the countries beyond the Caspian. They neither cultivate the ground, nor rear cattle, but exchange the produce of their manufacturing industry for the necessaries of life. They always live on good terms with their neighbours, and court their friendship; but are nevertheless ever on their guard against attack, and the only two passes leading to their country are defended by fortifications, mounted with small copper cannons, cast by themselves. They never make war, nor pay taxes; they are governed by a council of twelve elders, chosen by the people; and their disputes are settled by arbitrators, to whose decisions they submit without a murmur. The Kasi-Coumyks live also on a branch of the Koisou, under a khan, whose authority extends over 100 villages, and who is fiercely opposed to the Russians. He resides at a place called Chahar or the town, and can raise on an emergency 6000 men. The Kasi-Coumyks are zealous Mahometans; they practise agriculture as well as the rearing of flocks, and are notorious marauders. Besides these seven classes, there are several other Lesghian tribes not enumerated by Guldenstædt, whose dialects he could not ascertain.

Towns in Daghestan.—Derbent, an ancient but decayed city, on the Caspian, in lat. 42° N. long. 48° E., in a very pleasant situation, which rises gradually from the sea to the top of a hill, and commands a very extensive prospect, especially towards the south-east. It is surrounded by an ancient wall, built of large square stones, and formed, during many centuries, the key of the Persian empire in this quarter. It is still supposed to contain so many as 4000 families. In the neighbourhood is a tomb said to be that of forty Arab heroes, who were killed in battle against the infidels, when Derbent was taken by the Khalifs. The Mahometan Lesghis still make pilgrimages to it. Near Derbent are the remains of a great wall, which formerly extended to the Alazan, and was built by Khosru Noushirvan, king of Persia, to prevent the incursions of the Khasars; but which the people of Derbent ascribe to Alexander the Great, the wonder-worker of Western Asia. The upper castle of Derbent is built on an abrupt rock three miles from the shore; the lower stands close upon the water. These are connected by a double rampart, but to what era it is impossible to decide. *Kouba*, 50 miles S. of Derbent, was formerly the capital of a khanat, one of the most powerful in Daghestan, and is now the chief town of the province or district of Kouba. Its situation being unwholesome, a new town of the same name has been founded at a short distance to the westward. *Barchly* or *Kevrikh*, 20 miles N.W. of Derbent, is the residence of the khan of the Kaitak, who bears the title of *Ouzmei*, and exercises a sort of sovereignty over the Akushas and Kubashas. *Turkou*, *Terki* or *Tarki*, 75 miles N.N.W. of Derbent, the residence of a khan, with the title of *Shamkhal*, is built in terraces upon three peaked hills, about three miles from the Caspian sea, and has a population of 10,000.

8. The old province of Caucasus includes all the country to the north of the Terek and the Kouban, lying between the Caspian sea, and the eastern border of the government of Taurida, and bounded on the north by the rivers Kouma and Manytsh. It is almost entirely a sandy steppe; but the province may now be considered as including also the hill country between the Upper Kouban and Lesghistan.

to the summits of the Caucasus, called Kabardah and Little Abassia, and inhabited by the *Ossetes*, the *Mistdjeghis* or *Kistes*, and several of the subjected Circassian and Abassian tribes. The eastern portion of the mountains, bordering on Lesghistan, and extending westward and northward to the upper Terek and its affluent the *Souja*, is occupied by the Mistdjeghis, some of whom are nearly as great robbers as the Lesghis. The Russians have not yet been able entirely to subdue them, and it is even necessary to send an escort of 150 men with official dispatches from Mozdok to Vladikaukas. The *Chechenzies* are the most powerful tribe; the *Karaboolaks* are as wild and troublesome; but the *Ingooshes* have been subdued, and are more inclined to agriculture and peaceful occupations than any other of the Caucasian highlanders; though in religion and moral feelings they are not superior to their neighbours. The *Ossetes* live to the west of the Mistdjeghis, and are a people of precisely the same character. Their language and other circumstances have induced some writers to believe that they are a Median colony transplanted into the Caucasus at some remote epoch; and Klaproth supposes them to be the Sarmato-Medians of the ancient, and the Alani or Ases, of the middle ages. The Russians have, as yet, succeeded in establishing their authority over only a few villages in the valleys of the Terek, through which the military road to Georgia passes. The low country, to the north of the Terek and the Kouban, is inhabited by *Nogai-Tartars* and *Coumyks*; the latter of whom possess the lower parts of the rivers Sundsha, Koisou, and Axai; the former the country farther west.

The Russians first got possession of this country in the time of Peter the Great, who even extended his dominion along the Caspian Sea into Ghilan; but, in the reign of the Empress Anne, the military establishments were withdrawn to Kislar, and a line of forts carried along the Terek, for the defence of the frontier. Mozdok was built in 1763, and from that point the line was extended gradually westward to the Sea of Azov, along the northern bank of the Kouban. The wars in which the Russians have been engaged with Persia and Turkey having led them again to the south side of the Caucasus, they have been anxious to establish their authority over the intervening mountain tribes, who, if not reduced to subjection, are likely to prove the most troublesome and dangerous neighbours. In the course of time they will probably succeed in effecting their subjugation; but as yet their progress has been very slow; and, as the policy of the government is not to adopt the only means of civilizing them, by introducing a rational system of moral and intellectual education, the contest will most probably end in the extirpation of the mountain tribes.

Stavropol, the capital of the province, is a neat fortified town, near the Kouban, lat. 44° 49′. N. long. 41° 50′ E. *Georghievsk*, the capital of the province till 1825, and still the residence of the military governor-general of Caucasus, is a well-built fortified town, on the left bank of the Pod-Kouma, 90 miles S.E. of Stavropol. *Konstantinogorsk*, a small town, 20 miles S.W. of Georghievsk, is celebrated for sulphureous warm baths, which are resorted to by people from the farthest parts of the empire. *Petigorsky*, another much frequented watering place, 40 miles W. of Georghievsk; the water is hot, and strongly sulphureous. At *Kislavodsky*, S.W. of Georghievsk, there is acid water. *Karass*, a neat town, between the two last named places, at the foot of the *Bech-tau* (the five mountains, 4320 feet high), is remarkable for a colony of Germans and Scotch. *Mozdok*, a commercial town, and one of the principal military stations on the line of the Terek, 80 miles E. by S. of Georghievsk. *Kislar*, an important fortress and a large town, on a branch of the Terek, near its mouths. Besides the garrison its population is reckoned at 9000, the greater part of which are Armenians. Some of them are very wealthy, and have built for themselves the finest church in the region of Caucasus, at the expense of £24,000 sterling. *Vladikaukas*, on the right bank of the Terek, nearly under the 43d parallel N. lat. and 45° E. long., is a small fortress, with earthen ramparts and a ditch, which are well protected by palisadoes. Though comparatively insignificant, it has fully answered its purpose of keeping the neighbouring mountaineers in check, and preserving the communication through the pass of Dariel, of which it may be called the key. A suburb extends between the fortress and the Terek, which is partly inhabited by Russian dealers, traders, and soldiers, and partly by peaceful Ossetes. There are also some large gardens, where every kind of vegetable, but more particularly cabbages and potatoes, thrive admirably. There is also a celebrated orchard planted by General Del Pozzo, a late commandant.

§ 2. *Siberia.*

Siberia is the general name of the vast region which extends in length from the Ural mountains, on the borders of Europe, to Behring's Straits and the northern Pacific Ocean, which separate it from America; and in breadth from the Artic Ocean to the Altai mountains, which form the border between the Russian and the Chinese empires. Its extreme length, measured from the southern extremity of the Urals to Behring's Straits, exceeds 4000 miles; and its greatest breadth, from the parallel of 50° N. lat. to Cape Severo-Vostochni, about 1870. The original Siberia was a small khanat founded by the Tartars in the year 1242, on the banks of the Irtish and the Obi, which took the name of *Sibir*, from its capital. This khanat was invaded by the Russians in the sixteenth century, and after considerable resistance, was added to the dominions of the Grand Duke. As the Russian discoveries and conquests extended to the eastward, the name was vaguely applied to all the newly acquired country, till at length it reached the farthest limits of Asia on the Arctic and the Pacific Oceans; and it was even, for a time, extended to the kingdoms of Astrakhan and Kazan, on the west of the Urals. The name is now definitively restricted to the country east of those mountains.

Siberia may be described generally as an immense plain, sloping upwards from the Arctic Ocean to the Altai mountains and the Urals; but with an ascent so gradual as to be scarcely perceptible. The Urals extend along its western border from near the gulf of Karskala, in lat. 68° N., to the river Ural in lat. 51°; but in few places exceed the elevation of 5000 feet, their higher summits being to the north of the Polar circle; and immediately to the east of them lies the basin of the great river Irtish. This tract is so low, that at Tobolsk, 550 miles, in a straight line, from the gulf or sea of Obi, the lower portion of the town is only 128 feet above the level of the Arctic Ocean. And even the basin of the upper Irtish, on the south side of the mountains, 1750 miles from the ocean in a straight line, or 1000 miles more by the course of the river, has been found not much to exceed 1900 feet. At Irkutsk, on the Angara, 1400 miles from the ocean, in a straight line, measured along the 105th meridian, the elevation is 1246 feet; but at Kiakhta, 150 miles farther south, it rises to 2228. At Yakutsk, on the Lena, 560 miles from the sea, on the 130th meridian, the elevation is only 287 feet; and even at Katshuga, near Irkutsk, where the rivulets which form the upper branch of the Lena have their sources, it is only 1509 feet. The country which forms the watershed, in this direction, between the basins of the Lena and the Angara, though extremely uneven, is not mountainous; but a considerable rising is perceptible from Irkutsk to Katshuga, and the highest point of the road between them is 1771 feet. From Yakutsk to the river Aldan, the ground rises continuously, but gradually, as it proceeds eastward, till at Nokhinsk, on the western bank of the Aidan, it reaches 751 feet. On the eastern banks of that river, the mountain range, which has derived its name from the stream, rises with a steep ascent. The mountain pass on the road to Okhotsk is 2619 feet high; and Mount Kapitan, the highest point of the Aldan mountains in this direction, rises to 4055 feet. On the east of Mount Kapitan, the country continues to be from 2400 to 2600 feet above the level of the sea; and only to the east of Ketanda, in 60° 40′ N. lat., and 141° 38′ E. long., it descends with a rather steep declivity to Okhotsk, which is only 13 feet above the level of the sea. The mountains of Aldan form

the eastern boundary of the great plain of Siberia, and leave between them and the sea of Okhotsk, only a very narrow strip of land covered with marshy forests, which produces scarcely any plant subservient to human subsistence.

The plain of Siberia seems to consist almost entirely of steppes and marshes, intersected by large sluggish rivers, which roll down an immense mass of water to the Arctic Ocean. The steppes are extensive plains, somewhat different from each other in nature and aspect. In some places they are, like the American savannahs, covered with abundance of tall grass; in others the soil is saline, the salt appearing in the form of an efflorescence mixed with the earth, or in ponds or lakes of salt water: in general, they consist of very loose soil, and contain many lakes, because the waters, finding no declivity, remain stagnant. The steppe of *Ischim* occupies the greater part of the country to the south-west, between the Tobol and the Irtish, an extent of 700 miles from east to west; and the country between the Irtish and the Obi is occupied by the steppe of *Barabinsk*, of hardly less extent than the other, which comprises the whole space between the Irtish and the Obi. It is by no means dry and parched, as the word steppe is sometimes thought to imply, but abounds, on the contrary, with water to a remarkable degree, being full of lakes, morasses, and rivers, which flow either into the Om, the chief river of the steppe, or into the Obi or the Irtish. In some places the plain is a bog as level as the sea: here and there it is covered with grass or weeds, and with poplars and birches. Many of the little lakes are salt. The two largest are the *Uba* and the *Itkul*. The steppe of Ischim, sometimes, though rarely, presents the same aspect; and in both many tumuli or barrows are found, containing the remains of Tartar or Mongolian chieftains. Between the upper Obi and the Yenisei is a hilly ridge, which, however, disappears in the neighbourhood of Yeniseisk; and though there are some groups of hills in the south-western part of the district of Mangaseisk, which send a few small streams to the ocean, these are mere specks in the vast marshy plain which extends between the lower parts of the Obi and the Yenisei, presenting a dismal region, where the ground is continually frozen to a great depth, only superficially thawed in summer two or three feet, and covered here and there with some stunted plants, and a carpeting of moss. Beyond Beresov, in 63° 20′ N. lat., the face of the country along the Obi consists of an uninterrupted swamp, which is constantly frozen over, and unvaried by tree, hill, or mountain, except that the dwarf pine and the sand willow are occasionally seen. Such is the only prospect which meets the eye of the traveller for 400 miles along the Obi to Obdorsk, near its mouth. Farther to the east, in the country of the Tongooses and the Yakûts, lofty and well-grown larches veil the barrenness of nature, for 400 miles inland, but their number decreases as the traveller proceeds northward, and they gradually become dwarfish and stunted. Both the tree itself and the moss which covers it become coarser, but nothing can save them from the destructive blast of the north wind. A few stunted birches are the last to contend with this dread enemy, and the 70th degree of latitude may be assigned as the limit to the growth of trees. Between that line and the Arctic Ocean, extends an apparently interminable waste, called the *tundra*, consisting of land, lakes, and sloughs. It contains few rivers or streams, but some of the lakes are large, and of considerable depth, and all of them abound in fish. A death-like silence reigns throughout, only interrupted by the summer birds of passage. Still further north than this dreary region, there is a chain of large islands, separated from the mainland of Siberia by a strait of the Arctic Ocean, which is free from ice only for a few weeks in August. The general depth of this strait is small, although a strong current sets through it in the direction of Behring's Straits. In many places the former limit of the sea may be traced several miles inland; it is, in general, high and steep, whereas the present shore is low and flat; and on the intervening space is found a quantity of dry and half-decayed wood, apparently left there by the receding waters. Icebergs sometimes rest on the bottom of the strait. The islands extend 400 miles in a direct line from east to west, from the Lena to the Kolima, between the 74° and 77° N. lat. The largest is named Kotelnoi; which is hilly, and watered by a small river. Ammonites with a pearly lustre are found in its sands. Another of them is named *Noraia-Sibir* or New Siberia, discovered in 1809 by M. Hedenstrom, who explored 140 miles of its coast. The Arctic Ocean may be said to commence only to the north of these islands in the 76° of latitude. It never freezes, but in March every year a few detached blocks of ice may be seen floating upon it. The regions along the southern borders of Siberia are, as might be expected, considerably different from those we have now been describing. Though hilly in many places, they contain large tracts of excellent pasture ground, and some which are even very fertile in grain; so much so, that in the district of Krasnoyarsk on the Yenisei, the soil is so rich that it requires very slight labour, and may be cropped for five or six years, or even more, in succession, without manure. In the neighbourhood of Irkutsk the country is agreeable, the soil fertile, and agriculture flourishing. Kirensk, on the Lena, has also a fertile territory, producing plants of extraordinary size. As the Baikal is approached the country becomes more and more mountainous; and the district of lower Udinsk, to the south of the lake, is almost entirely covered with dark and marshy forests, where the soil produces nothing but moss and marsh plants, similar to those of the northern regions; and Upper Udinsk appears to be composed of sand and rocks, with a soil ill fitted for the culture of vegetables. It possesses, however, an astonishing variety of soil and climate; containing in one place narrow, gloomy, and cold valleys; and in another, hot sandy plains, and, a little way off, a surface of neutral salts. The province of Nertshinsk, south-east from the Baikal, along the Amoor, is covered with mountains. The plains are only wide valleys containing every where precipitous and perpendicular rocks, which have the appearance of being suspended in the air.

RIVERS AND LAKES.—The OBI issues from Lake Teletskoi or Altyn Nor, in the territory of the Kalmucks, near the frontier, under the 52° N. lat. Insignificant at its origin, it goes at first by the name of By or Biya, and only takes that of Ob or Obi after its union with the *Katunia* or *Katunya*, a large river, which joins it from the west. It passes through the governments of Tomsk and Tobolsk, becoming larger and more rapid by the accession of many powerful streams, and enters the Arctic Ocean at the head of the deep gulf or sea of Obi, to which it gives its name. Its affluents on the right are the *Tom*, which waters Tomsk, the *Chodim*, the *Ket*, the *Tim*, and the *Vakh*. The principal affluent to the left is the IRTISH (Irtyche or Irtuish, Ertshish of the Mongols), as large as itself, or, as some say, rather larger, which, rising in the great Altai mountains under the 46° N. lat., forms the lake *Zaisang* in the Chinese territory, and thence flows north through the mountain border of the two empires. It receives in its progress the *Narym*, *Bukhtarma*, and *Uba*, before it enters Siberia, and afterwards the *Ishim*, *Tobol*, *Sosva*, and several other streams from the left, and joins the Obi in lat. 61° N. The Teletskoi lake, from which the Biya issues, is inclosed by high mountains, but receives a considerable river, the *Chulyshman*, from the Chinese territory.

The YENISEI has its sources in the country of the Ouriangkai, in the Chinese territory, where it is formed by the union of the Oulou-kem, and the Beikem. After entering Siberia it flows almost due north to the ocean, with a very large and rapid stream, which, even at Yeniseisk, is already 3600 feet wide. Its principal affluents on the right are, the *Upper Tongouska*, the *Podkamenaia Tongouska* (Tongouska beyond the rocks), and the *Lower Tongouska*, which is the largest of the three. The Upper Tongouska issues from the Lake Baikal, under the name of *Angara*; and if we consider the *Selinga*, the principal feeder of the Baikal, as a continuation of the Angara, then the remote sources are to be traced to the south side of the Altai, nearly 500 miles south-west of Irkutsk.

The *Piasina*, the *Taimoura*, the *Khatonga*, the *Anabara*, and the *Olenik*, are comparatively small rivers which enter the ocean between the Yenisei and the Lena.

The LENA, one of the largest rivers of Asia, rises at Katshuga near Irkutsk, 2000 feet above the level of the sea, flows north-east and nearly due east to Yakutsk, where it turns north, and flows in that direction to the ocean, which it enters by several mouths. Its principal affluents on the right are, the *Aldan* and the *Vitim;* on the left, the *Viloui*. The *Iana*, the *Indigirka*, and the *Kolima* or *Kolyma*, are considerable rivers which enter the Arctic Ocean to the eastward of the Lena. The *Anadir* flows eastward to the Gulf of Anadir, to the south of Behring's Straits.

The URAL, which forms the boundary between Europe and Asia, rises on the east side of the Ural mountains, from the foot of Mount Kolgan, in lat. 54° 50′ N., and flows nearly due south for upwards of 250 miles, when it turns westward and leaves Siberia.

The great Lake BAIKAL, in the south-eastern part of Siberia, embosomed among high mountains, between 51° and 56° N. lat., and 104° and 111° E. long., is about 360 miles in length, and from 20 to 52 wide, about 1200 in circumference, and contains a surface of 14,800 square miles. Its depth varies from 20 fathoms to 100, and in some places exceeds even 200. It contains many islands along the eastern and some on the western shores; but most of them are of small extent, and only masses of rock. The largest island, named Olkon, is 32 miles in length, by 10 in breadth, is rocky and mountainous, and is separated from the shore by a strait two miles wide and very deep. The water of the lake is fresh, and extremely clear. It freezes in November, and thaws in May, and during winter is crossed in sledges. It is subject to remarkable agitations, being sometimes raised into high waves by a moderate wind, and at other times scarcely put in motion by a violent storm. It also is said to be liable to a kind of intestine commotion or boiling, by means of which vessels receive rough shocks, even when the surface is perfectly smooth. The lake contains seals, though none of these animals are ever known to ascend the river Ienisei, and its affluent the Angara, which issues from the lake. It also contains a particular kind of fish, which the Russians call Sollamanka, and which, according to Pallas, consists entirely of bones, and an oily grease. The waves sometimes throw on shore a kind of bitumen. The principal feeders of the lake are the *Selinga*, on its south-east side, which has a course of 700 miles; the *Upper Angara*, at the north-east end, which has a course of 450 miles; and the *Barguzin*, on the east side, which has a course of 300 miles. The surplus waters are discharged by the *Lower Angara*, which issues through a deep crevice near the south-west point of the lake. The Russians speak of the Baikal with a respectful awe; and give it the name of the Holy Sea; even the surrounding mountains are held sacred. Its name is derived from the language of the Yakûts, who call it *Bayakhal*, the rich water. Its surface is 1793 feet above the level of the sea. In summer it is navigated by the Russians, and in winter it is crossed in sledges.

The other lakes are of little importance. Lake *Tshamy*, 80 miles in length by 50 broad, lies in a part of the steppe of Baraba which is filled with lakes almost touching one another. The province of Kolhyvan and the steppe of Ischim also contain a great number of lakes of which *Karg-Algydim* is the largest. In the districts of Iset and Iekaterinburg the number of small lakes is very great. Salt lakes are almost equally numerous, and are found in all parts of the country. The lake *Bielai* or *Ebelai*, in the steppe of Ischim, is one of the most abundant in producing salt; and in the middle of the steppe of Baraba is the famous lake *Yamish*, 7 or 8 miles in circumference, the salt of which is extremely white, and crystallizes in cubes.

CLIMATE.—The climate of Siberia is, in every sense of the word, excessive. Exposed without shelter throughout its whole length to the winds which blow from the Polar ice, and excluded by the high mountains of Central Asia, from the more genial breezes which would otherwise reach it from the equatorial regions, the cold in the northern part is keener and more constant than that of Lapland, and the same intensity is sometimes experienced among the southern mountains between the parallels of 50° and 55°. The winter lasts for nine or even ten months. Snow begins to fall in September, and is not rare even in May. The corn crops, when not ripe in August, are considered as lost; and they are often covered with snow before they can be cut down. The consequence of this almost continual cold is, that in all the northern parts of the country the ground is constantly frozen to a great depth; and it is only the surface that is thawed by the summer heat to a depth of from one foot to three feet and a half. Even so far south as the latitude corresponding to Scotland, between 56½° and 58°, Humboldt found some springs of no great depth, the temperature of which was 34° 7′ and 36° 5′. Some degrees to the north of Irkutsk, where the mean temperature of the year is between two and three degrees below the freezing point, the soil always remains frozen to the depth of 12 or 15 feet. At Bogoslovsk, in the middle of summer, a bed of frozen earth, nine feet and a half thick, was found at the depth of six feet below the surface; and, at Yakutsk, 62° N. lat., notwithstanding the high temperature of the atmosphere, in July and August, the subterranean ice is perpetual. At Yakutsk, in lat. 62° 1½′ N., a well has been lately sunk to the depth of 382 feet, by which the temperature has been ascertained; and this immense thickness proves that Siberia must have been in the same physical condition for a long period of years as it is at present. The mean temperature of the atmosphere at Yakutsk is 6° Reaumur; in 1828, the mean temperature of January at two P.M., was 35° 7′ Reaumur, and the mercury did not thaw for three months in succession; in ordinary years it is solid only for two months. It is impossible to determine accurately, in the present state of our information, the boundary of this layer of ground ice; we know only enough to say, that it extends over an immense tract of country. Humboldt found the soil frozen at a depth of six feet at Bogoslovsk, 59° 44′ N., near the Urals. Near Beresov, Erman found the temperature of the soil at a depth of 23 English feet to be + 1°; but in 1821, a dead body, which had been buried upwards of 9½ years, was found in a bed of ground ice showing no signs of decomposition. It has long been known that the soil at Obdorsk is always frozen. At Tobolsk there is no ice, but the farther we proceed eastward the more the direction of the ice is to the south. Georgi found it on the shores of Lake Baikal, and it is said also to be found at Nertshinsk. No ice is found at Okhotsk, and the soil is in general warmer on the shores of the Pacific. The summer heats are short, but are sudden and powerful. In the neighbourhood of Yakutsk the Tongooses often go naked in summer. The growth of vegetables is almost perceptible. But in the neighbourhood of the Arctic Ocean, in the middle of the long day of the polar circle, a north wind is sufficient to cover the waters with a thin crust of ice, and to give a yellow and red tinge to the leaves of plants. Vegetation is often limited to a few days; but in that short interval the plants flower and form seed; they sometimes even grow in the morasses, where at all times ice is found on raising the moss. At Kolyma, the vegetation of summer is little more than a struggle for existence. In the latter end of May the stunted willow bushes put out small wrinkled leaves, and those banks that have a southern exposure, become clothed with a greenish hue. In June, the temperature at noon attains 72°; the flowers appear, and the berry-bearing plants blossom, when sometimes an icy blast from the sea gives the verdure a yellow blight, and destroys the bloom. The air is clearest in July, and the temperature is then usually mild, when millions of musquitoes darken the air, and force the rein-deer to leave the forests, and take refuge in the cold open plains near the sea, where they are pursued and killed without difficulty by the hunters. Winter prevails for nine months. In October the cold is somewhat mitigated by thick fogs, and by the vapour which rises from the freezing sea; but in November the great cold begins, and in January increases to 65°. Breathing then becomes difficult; the wild rein-deer withdraw to the deepest recesses of the forest, and stand there motionless as if deprived of life. As the sun returns the cold becomes even more piercing; and the intensity of frost which accompanies the rising of the sun in February and March is especially penetrating. Perfectly clear days are extremely rare in winter, because the sea-winds,

which always prevail, bring with them vapours and fogs, which are sometimes so thick as wholly to conceal the stars. But, though the climate is so severe and unkindly, it is not injurious to health; and the inhabitants are not subject to scurvy nor other infectious diseases. Storms are frequent in the southern regions; but near the ocean thunder is scarcely ever heard, though distinct flashes of lightning are sometimes seen. In the low countries on the Lenisei, the aurora borealis is seen from the beginning of October till Christmas; and in no country does this phenomenon exhibit greater magnificence. The climate of Siberia is, on the whole, favourable to man. Fogs prevail not only over the northern and eastern regions, but also in the steppe of Baraba, the inhabitants of which have a cachectic look. In Daouria, and round Nertshinsk, the confined narrow vallies give rise to fevers, epilepsy, and scurvy.

NATURAL PRODUCTIONS.—In so rigorous a climate only the most hardy plants can thrive: the oak, the hazel, the alder, the plane, and the wild apple, cannot withstand the rigours of the Siberian winter. They disappear in the neighbourhood of the Urals and the banks of the Tobol; but the oak and the hazel appear again, though feeble and languid, on the banks of the Amoor. The lime and the ash cease at the Irtish; the pine, which in Norway reaches the parallel of 70°, does not in Siberia pass beyond 60°; the silver fir reaches no farther than 58°. The common gooseberry, which grows in Greenland, does not succeed farther north than Türükhansk on the Lenisei, in lat 68°. Potatoes diminish in size, till, at the latitude of 60°, they are no larger than pease, and here the cabbage ceases to expand. But we are not to conclude from these facts that the great Siberian rivers pass through barren wastes; for they are skirted with thick forests of alders, willows, elms, Tartarian maples, white and black poplars, and aspens, besides an immense quantity of different kinds of pines, among which the Siberian cedar (*pinus sibirica*) sometimes reaches a height of 120 feet, while its rings of branches sometimes indicate an age of 150 or 200 years. It is only as far as the Lenisei that this tree displays its magnificence; to the east it diminishes in size, and, beyond the Lena, towards the eastern sea, it becomes quite dwarfish, though still preserving its proportions. The balsam poplar perfumes the air, and exudes its odoriferous resin. Siberia produces neither apples nor pears. The wild pear of Daouria only yields a tasteless fruit, of the size of a cherry. The fruit of the Siberian crab is also small; but the berry-bearing undershrubs, the *rubus chamæmorus*, the *rubus arcticus*, and different kinds of *vaccinium*, abound, and agreeable drinks are made from them. The steppes are covered with a kind of cherry tree, the fruit of which is abundant, and is used for making a species of wine. The Siberian apricot, which grows only in Daouria, produces a sourish fruit; the wild cherry grows in every part of the country, but the garden cherry tree becomes languid even in the neighbourhood of Ischim. During their short summer these wild countries are adorned with a considerable number of beautiful flowers, each region possessing some peculiar to itself. The true rhubarb has been sought for in vain. In western Siberia, cultivated grains generally disappear about the 58th parallel, though even there, on the banks of the Obi, Mr. Erman learned that wheat and barley produce forty fold on the fertile soil which is inundated by the river; and still farther north, at Beresov, 63½° N. lat., the cultivation of barley and rye has been tried with success. In eastern Siberia grain has been found not to ripen at 55°, nor in Kamtschatka at 51°. The mountains on the southern frontier are too cold and too dry; so that three-fifths of Siberia are scarcely susceptible of any sort of culture; but the south-western parts possess remarkable fertility. In the north of Kolhyvan barley gives a return of twelve, and oats of twenty fold. Buck wheat is apt to shoot in this black and light soil; but when sown in thinner soil it gives a return of from twelve to twenty fold. The greater part of the cerealia known in Europe grow also in the south of Siberia; but only the winter rye, barley, and oats, are cultivated. The Tartars, who are fond of white bread, have great difficulty in rearing a little wheat. In short, beyond the 60th parallel of latitude, with the exception already mentioned, and the 112th meridian, the cerealia do not succeed. In the north they are destroyed by the cold; and on the east the fogs prevent them from ripening. The culture of potatoes now supplies their place to a considerable extent. Common flax grows in several parts of the Urals. The *linum perenne* reaches to 66°; hemp only to 55°. At the foot of the Altai mountains some Tartars make thread and cloth from two species of nettles, the *urtica dioica*, and *cannabina*. Hops are produced in great abundance.

ANIMALS.—Siberia scarcely exhibits a single genus of birds or quadrupeds which is not common to it with Europe. Wild rein-deer roam in herds near the shores of the Arctic Ocean, and, when domesticated, form the wealth of the desert tribes; but they come down to a lower latitude than in Europe. Herds of them have been seen on the mountain border of Mongolia, near the sources of the Onon, between lat. 49° and 50°; and thus the countries of the rein-deer and the camel, which in the western parts of the old world are separated by an interval of 20 or 30°, here touch each other, or perhaps are intermixed. A Samoiede is reckoned rich who possesses 150 rein-deer; some Tongooses have as many as a thousand; a Koriak, several thousands; and we are told that among the Tshuctshes there are men who own as many as 50,000! The Siberian dog, resembling the wolf, is in some measure the companion of the rein-deer. He serves as an animal of draught, not only among the Kamtschatdales, but also among the Tungooses, the Samoiedes, and the Ostiaks. He is swift and agile, but wild and difficult to guide. The Tartars of western Siberia have carried along with them in their migration the favourite animal of their nation, the horse. The greater part of the Siberian horses are white. The sheep of the nomadic tribes are of the broad-tailed kind. The black cattle of Russia, when transported to Siberia, diminish in size, but improve in strength. In general the animals of central Asia extend more or less into the southern parts of Siberia. The camel not only comes to the country with caravans, but he lives in Daouria among the Russian Mongols. Next to North America and South Africa, Siberia is the most extensive hunting ground in the world; but, owing to the eagerness with which they have been pursued, the animals of the chase are now very much diminished in number, and are only to be found in the most remote districts. Sables, ermines, marmots, martins, and squirrels, are the principal animals hunted for their skins. The rock or ice fox (*canis lagopus*, or *Isatis*), whose colour in general is white, but sometimes bluish, inhabits the icy zone, Kamtschatka, and the eastern islands. The elk is diffused over great part of the country, but does not pass the latitude of 65°. It is hunted in March when the snow begins to melt. The tahia or wild horse is found in the steppe of Ischim, and in various parts of the mountain border; the koolan or wild ass, the jighetai, a sort of mule, the stag, the roebuck, the antelope, the argali or wild sheep, which extends from the Caucasus to Kamtschatka, some wild boars on the banks of the Irtish, the musk animal, though rare, and beavers in Kamtschatka. There are also various small animals worthy of notice, as the hare of Daouria (*Lepus tolai*), the hare of Mongolia, the mountain hare, which makes a regular provision of hay; moles, weasels, and several animals of the rat and mouse kind, among which we may mention the lamming, and the species called the *mus œconomicus*, and the *mus socialis*, which store up in their holes considerable quantities of onions and other esculent roots, which the Siberian diligently searches out, to apply them to his own use. Among the wild beasts the white bear is the most formidable; the brown bear is also common; the ounce, and a species of panther with long white hair, have been found in the south; the lynx and the glutton are natives of every part of the country, and even the tiger has appeared on the banks of the Lena, to the north of lake Baikal. Both natives and travellers are annoyed by insects; in summer the air is darkened with mosquitoes, and even the rein-deer are forced to take refuge from these tormentors in the wilds of the tundra. The houses are infested with bugs. The country abounds with winged game, as wild-ducks, geese,

swans, water-hens, woodcocks, and partridges; and in summer innumerable flocks of ducks and geese cover all the lakes and marshes of the tundra. The Greenland and other seals, and the morse abound in the Arctic ocean; and a particular kind of seal is also found in the Baikal. Herrings are caught in the rivers in vast quantities; and it is worthy of remark, the farther to the east this fish is caught, the larger is the individual, although they are all of the same species. The herrings are followed up the rivers by a species of smelt called the muksun. The Lena is visited by shoals of sturgeon, and the salmo omul is occasionally found in the rivers of the tundra. The *salmo nasus*, and the *salmo autumnalis*, ascend all the rivers which have stony beds, as the Ienisei, the Lena, and others to the east, but do not enter the Obi, which has a slimy and earthy bottom. But to compensate this deficiency, the Obi produces very large sparlings, numberless sturgeons, white salmon, pikes, eels, and eel-pouts. The fisheries on the east coast, and among the adjoining islands, are very rich, and remarkable. In the seas which wash these regions are numberless shoals or herds of whales, sea-bears, sea-wolves, manatis, and sea-otters. Besides these living animals, numerous remains of elephants, rhinoceroses, and other animals of the torrid zone, have been found along the banks of the Irtish, the Obi, the Ienisei, the Lena, and even on the very shores of the Arctic Ocean. Bodies of these quadrupeds are found mixed with sea-shells, and bones which appear to be the skulls of the largest inhabitants of the ocean; they are met with along the river sides, and in beds of earth or ice, and seldom, if ever, in a pebbly stratum. The *Liakhof* or *Lachow* islands are composed entirely of sand and the bones of elephants, rhinoceroses, and mammoths or Siberian elephants, which are quite entire, even sometimes with the flesh and skin in good preservation. Naturalists are quite at a loss to account for the occurrence of these remains in so high latitudes.

MINES AND MINERALS.—Siberia is rich in mines of gold, silver, platina, copper, and iron. Red lead, or the chromate of lead is found in the mines of Beresov. Chrysolites, opals, beryls, lazulites, feltspar, jasper, talc, black porphyry, and other minerals occur in various places; and, there can be no doubt, that much mineral treasure yet remains to be discovered. The grand mining districts are in the northern part of the Urals, on both sides of the range, in the government of Perm. It is, however, on the Asiatic side of the mountains that the auriferous sands are found, which contain pieces of gold, platina, and chromate of iron united with platina. These metals are often found only a foot below the surface. The principal gold mines are those of Beresov, in the district of Iekaterinburg (56° 54′ N. lat.) They were first worked for gold in 1754, but they did not rise to any importance till the time of Catherine II. The number of workmen employed is upwards of 3000. The ore is an iron pyrites, mixed with quartz, which contains gold; 3¼ or 5 lbs. English are obtained from 1250 stone weight of the crude ore. About 45 miles N. by W. of Iekaterinburg are the gold mines of *Neviansk*, belonging to the Yakoklef family, which are managed and wrought by their serfs, who compose the great bulk of the population of the district, about 10,000 in number. Though the proprietors rarely visit their estates, they have a castle at Neviansk, which is richly furnished in the antique Dutch fashion of the days of Peter the Great; where they allow a liberal sum to their steward expressly for the entertainment of respectable travellers. The earliest mining works at Neviansk were constructed by a body of the unfortunate Swedes who were taken prisoners at the battle of Pultova, in 1709. The mines of *Tagilisk*, 70 miles N. by E. of Iekaterinburg, with seven others within a circuit of 30 miles, all belonging to the Demidoff family, are, like those of Neviansk, wholly managed by serfs, without any immediate or personal superintendance of the owners. The principal produce is iron, but the district yields also copper, gold, and platina. The magnitude of the works at Tagilisk corresponds with the boundless mineral treasures of the surrounding country; the roasting furnaces being large enough to contain at once 14,000 tons of ore. The value of the mineral veins possessed by the Demidoffs is much enhanced by the immense extent of forest included in their estates, and which are adequate to feed the blazing fires of their colossal furnaces for ages to come. On the territory belonging to their mines are 5000 square miles of fine forest, in which the trees stand so close together that the woodman has scarcely room to wield his axe! In quantity, as well as in financial importance, the iron undoubtedly far surpasses the other metallic produce of the country. There is annually produced the enormous quantity of 132,000 tons of metal, of which four-sevenths are consumed in European Russia, two-sevenths in Asiatic Russia, and one-seventh is exported to the south and the south-west. The iron ore near the surface is spread over so wide an extent, that it is calculated many ages must roll over before it be exhausted: the hill of Blagodat alone, which rises from the plain near Kuschiva or Koushva (38° 17′ 30″ N. lat., 60° 18′ E. long.) to the height of 1534 feet above the level of the sea, is entirely composed of magnetic iron ore, forming a mass much larger than would be consumed in a century at the present rate of production. The Uralian copper mines yield about 3500 tons of metal yearly. The gross value of the platina and gold found in the Urals nearly equals that of the iron; and the total annual production of that celebrated region may be valued at £1,500,000 sterling. Silver is rarely found in a native state, but is often mixed with gold, and in one of the Daourian mountains with lead. Corneous silver ore *(argentum muriatum)* is found at *Schlangenberg* (called by the Russians *Zmeiawetkaia-gord*, in the Little Altai mountains, and in the district of *Semipulatnoi*), where sulphuret of antimony and silver, and arsenical ore, and copper pyrites, also abound. In Daouria, south-east of Lake Baikal, are the numerous silver mines of Nertshinsk, opened in 1704. The ore is rich in lead, and contains a little silver, which is easily extracted. Besides the copper mines in the Urals, there are some in the Altai. The richest mines are on the Siberian side, at Turia-Wasilewskoi, Trolewskoi, and Ologowskoi; and are found at the limit which separates the schistous rocks from the pure limestone. The copper of Siberia is exceedingly ductile. The prevailing ores in the mines last mentioned are the red oxide and the blue carbonate. Malachite or stalagmite copper is also found here in the greatest perfection. The iron mines diffused over Siberia (besides those of the Urals) are little worked. The peasantry smelt iron in the neighbourhood of Krasnoyarsk and Ieniseisk; but at Nertshinsk and Kolyvan the other more valued metals are so productive that iron is despised. In 1749 a mass of native iron was found, between Abakansk and Karaoolnoi Ostrog, near the upper Ienisei, weighing 1680 lbs., which, according to a tradition of the natives, had fallen from the atmosphere. Asbestos is also produced abundantly in the Urals and in other places; and on the eastern coasts there is found a soft and almost fluid clay, called lithomarge or rock marrow, which the Tongooses eat by itself, or with milk, without inconvenience. Throughout Siberia there is found on the aluminous schistous an efflorescence called "rock butter," which is used by the people as a remedy for diarrhœa and the venereal disease. Diamonds have lately been found, but in small quantities.

PEOPLE.—The Russians are of course the dominant people; but they, with the Cossacks, and other colonists from Europe, inhabit chiefly the towns and the military stations. Some of them are descendants of the soldiers employed in the conquest, or in keeping the country in subjection; others are criminals sent thither for banishment, with their descendants. To these two classes must be added adventurers, peasant deserters, and ruined merchants, who seek here the means of repairing their fortunes. The higher officers of government are a very fleeting class of the community: all of them, whether civil or military, who volunteer to serve in Siberia, are entitled to promotion by three years' service beyond the Irtish; many seek professional advancement by this voluntary exile, but few prolong their stay beyond the time required. The advancement, however, of civilization in Siberia of late years, and the greater advantages which it now holds out to settlers, have induced many people of a better description than those who used formerly to visit it, to take up their permanent abode in

the principal towns, and in the more fertile and agreeable districts of the country. Little more than a century ago the Siberians were considered so savage a race, that Peter the Great believed he could not inflict a severer punishment on his enemies the Swedes, than to send them to Siberia. The consequence was, that these honourable exiles introduced into the country some of the customs and manufactures of Europe, and while employed in ameliorating their own situation, civilised the people among whom they had been forced to settle. More lately, the governors, with civil and military officers, have introduced into the principal towns the manners of St. Petersburg, accompanied with all the Russian vanity and ostentation. But this refinement has scarcely yet extended to the small towns and villages scattered over the vast wilderness; though even there, in the most remote stations, respectable travellers are received with the greatest hospitality, and treated with the most cordial kindness. Some of the settlers, though rich in flocks and herds, scarcely know the use of money, and lead a life purely patriarchal. The hunters, however, that roam over the deserts, are not much removed from savages. They sleep on the frozen ground; quench their thirst with wild berries; and even drink the blood of their victims. The Cossack who, at Tobolsk, or Irkutsk, finds himself confounded with the populace, becomes a sort of monarch when sent among the Samoiedes or the Yookaghirs, to collect their tribute and maintain order. Some Cossack families have obtained the rank of dvorianin, or patrician nobles. The garrisons of the posts and stations along the frontiers are mostly composed of Cossacks, who are everywhere the most active and useful servants of the government. The merchants of Siberia used to be chiefly itinerant, going from town to town, and from market to market. Of the exiles, those condemned for political offences, and who belong to the upper classes of society, are usually sent to towns far to the north or the east, where, from their strong nationality and constant habits, they are unable to accommodate themselves to the rude and simple manners of the country, and consequently lead a miserable existence. The difficulty of keeping horses, or of using them in a country of snows and morasses, is a frequent ground of complaint. The exiles or unfortunates, as they are compassionately styled residing in Tobolsk, are chiefly persons convicted of embezzlement, or other acts of dishonesty. They are in general free from all kind of restraint, but some of them are bound to perform certain religious penances in the churches; and many submit to the same punishment voluntarily. Offenders of the worst class are often condemned to hard labour in the mines of Nertchinsk for one year or more, and after having completed the period of their severe punishment, are allowed to reside in Tobolsk; but, generally speaking, the Siberian exiles of the labouring classes are in the situation of settlers enjoying full liberty to make the most of their industry. Their exile puts an end to their vassalage for the greater part of them are originally serfs, and raises them to the rank of independent men. To this grand change in their condition, and the moral sense to which it gives birth, must be chiefly ascribed the revolution which takes place in their character. In this, their new country, the unfortunates of this class turn out for the most part exemplary men, and rarely fail to procure by their exertions a comfortable independence. To most of the settlers the long winter proves a period of relaxation from labour. The Russian works for one-half of the year with matchless energy, to make himself comfortable during the other: and when the time of rest arrives, he sits down with a keen appetite to feast on his hoarded stores. The exiles are to be found everywhere comfortably lodged, and in the midst of abundance, which they always feel a pleasure in sharing with the stranger.

Numerous Tartar colonies occupy the southern part of the government of Tobolsk. Those farthest east are the Biriusses, the Kat-chini or Katchinians, and the Beltires; three tribes which, more or less mixed with Mongolian blood, live in the neighbourhood of the Abakan, an affluent of the Yenisei. The Katchinians are rich in cattle; and their beardless visages shew them to be of Mongol lineage. In the south the Sayanians, who have some resemblance to the Mandchews, occupy the Sayanian mountains. A tribe of Teleoctes or Telengutes, live in the neighbourhood of Kutsznesk; but the greater part of them are found in the Kalmuck country. The Russians call them white Kalmucks; their language is half Mongolian. The Tomsk and the Tchulim Tartars inhabit a part of the banks of these rivers. In the Baraba steppe are the Barabinitsi, a nomadic people, some of whom are Mahometans, and the rest Pagans. The Tartars of the Obi live along the left bank of that river as far as Narym. The Tartars of the Tobol are found on both banks of that river, from the frontier to its mouth. The Tarahans, in the district of Tara, speak the same language as the last. The Turalinzi or Turalinians, the most civilized of all the Tartars of Siberia, inhabit the towns and villages on the banks of the Tara, from the mountains to the Tobol. They were forcibly baptized in the river by Philoppei, a nobleman or ecclesiastical dignitary, assisted by a body of Cossacks. The Tartars are generally of a robust and vigorous constitution. Their simple mode of life, their frugality and cleanliness, protect them from most of the malignant and contagious diseases, with the exception of the small-pox, which has at times made terrible ravages among them; and the precepts of the Koran protect the Moslem portion of them from the consequences of the drunkenness to which their Russian neighbours are too much addicted.

Tribes of true Mongol descent occupy the country about Kiakhta and Selinginsk, but are few in number. The Booriates or Barga-Buratt, a great Mongolian race, have peopled almost the whole provinces of Irkutsk and Nertchinsk. In external appearance they resemble the Kalmucks; but there is a greater proportion of fat people among them; they have still less hair; and many of them have no beard whatever. Their complexion is pale and yellow; they are very deficient in bodily strength: a Russian of the same age and size as a Booriate is a match for several of them in wrestling. They enjoy, however, good health, though they seldom reach an advanced age. The small-pox, once very destructive to this tribe, has been arrested in its ravages by the establishment of an institution for inoculation at Irkutsk. The itch is very prevalent, being greatly promoted by their manner of living and clothing. Those to the east of the Baikal make use of warm baths in chronic diseases. Their physicians are shamans, or sorcerers, who attempt to cure them by sacrifices, talismans, and incantations, rather than by natural remedies. They speak a very rude dialect of Mongolian, which is rendered unintelligible to strangers by frequent transpositions and changes of consonants. Those Booriates who live north-west of the Baikal are Shamanists, those to the south-east are Buddhists. Some of them cultivate the ground; but the far greater number live on the produce of their cattle; they have numerous herds of horses, bullocks, and sheep; also a few camels, which in winter are covered with blankets. Their chief wealth consists in horses. The number able to bear arms is 73,000. They are governed by native chiefs, called taishas.

Tongooses.—This people call themselves *Ewen*; the Chinese call them *Solon*, and the Yookaghirs *Erpegh*. They have a common origin with the Mandchews; and are distinguished by their regular conformation. They are usually of middle size, slender, and well made. Their face is less flattened than that of the Kalmucks; they have small and lively eyes, a well proportioned nose, a thin beard, black hair, and an agreeable expression. They are subject to few diseases, yet they seldom attain old age, a circumstance which is owing to the rigorous and unwholesome climate, and their laborious and dangerous mode of life. The priests or shamans are their physicians. Their sight and hearing are incredibly acute; they are not only well acquainted with every tree and rock within their district, but can point out with certainty a road of a hundred miles, by describing the stones and trees which occur in it; and they follow their game by the slightest tracks left on the grass or the moss. Their other senses, however, are less acute. Their religion is a branch of Shamanism; their chief god is called Bea. They practise polygamy. Their princes are called *taisha*, a word which appears to be

of Mongolian origin. Their language is a dialect of the Mandchew, with a mixture of Mongolian words, chiefly such as relate to objects of civilised life; and has eight or ten dialects. The Tongooses occupy no less than a third part of Siberia, extending from the Ienisei to the sea of Okhotsk, on the south-east, and to the Lena on the north-east. Those on the Lena, who are called *Olenians*, live by the produce of their rein-deer, and by fishing and hunting; those who occupy the coast of the eastern sea are called *Lamutes* or shoremen (from *lama*, the sea), and border with the Koriaks.

Finns.—Tribes of this race are found along the base of the northern Urals, and on the lower Obi. The *Woguls*, who live between the Tobol, the Beresov, the Obi, and the Urals, are under the middling stature; with generally black hair, and little beard. Their principal occupation is the chase, in which they display singular agility and address, managing with equal dexterity the musket and the dart. They also excel in laying all sorts of toils for deer. They call themselves *Mansi*, and have a very mixed language. They are nomadic; but, apparently with a view to spare the game, they change their dwellings less often than many tribes of Eastern Siberia. They never join more than five yurts or huts, in one station; and to prevent the wild animals from being frightened away by the smoke, these stations are not allowed to be fixed nearer each other than ten miles. Rein-deer constitute their whole stock; and even in summer these animals are yoked in sledges to cross the level country; but the winter is almost exclusively their season of labour, of travelling, and of collecting their booty. It is then that they are busily occupied in the chase of the fur-animals, and in the trade arising out of it with the Samoiedes, the Ostiaks, and the Russians. Their annual migrations, or trading excursions eastward, are very remarkable; for the European Samoiedes travel in winter across the Ural, and while their eastern neighbours and the Woguls, who dwell to the south of their route, all move in the same direction, they often drive 400 miles, as far as Obdorsk, to barter, in February, the produce of the chase for Russian bread. The Woguls, during summer, give themselves up to lazy repose, and, as the smoke protects them from the flies, they scarcely ever leave their tents at that season; in short, they seem to fall into a summer sleep, retaining just sufficient life to enable them to digest their winter feasts. The *Ostiaks* of the Obi, who are likewise of Finnish extraction, hold the whole extent of country from the Togurian district of the circle of Tomsky (in 59° north lat. and 83° 20′ east long.) to Obdorsk, and from about 100 miles north of that fort to about 660 miles south of it. In summer and at the beginning of spring they inhabit temporary dwellings, which they call jurtes, on the banks of the large rivers; but in winter they retire to the forests, where they have permanent jurtes in the neighbourhood of water. Their settlements are met with at intervals of from 6 to 24 miles, and contain from four to twenty jurtes, placed within 320 feet of each other, and built wholly of cedar-wood, although many other kinds of trees, as the birch, pine, fir, spruce-fir, and larch, are to be had in abundance. They are a small and feeble race, of mild manners, and unmeaning physiognomy; and have hair generally of a reddish, or light yellow cast. They wear a tight dress made of fish skins or furs. Nothing is more disgusting than their appearance and manner of living; and yet they enjoy good health. They generally die of scorbutic, nervous, or other chronic diseases. Their property consists wholly of rein-deer, and the possession of from 200 to 500 of those animals is considered as indicating affluence. Their name is said to be a Russian corruption of the Tartar word Ustiak, signifying wild or ignorant men. The northern Ostiaks call themselves *Kondicho*, from the name of the river Konda, and the word *cho*, a man. The Ostiaks of the south call themselves *Asjakes* after their river Jake. Historians have traced the descent of this people to the Finns, but there is a broad distinction between the two nations in their physical and moral conditions, and particularly in their languages. The Ostiak tongue is said to have no affinity with any European or Asiatic language (which can hardly be the case unless they be autochthones), and is so poor in words, that those who hold much intercourse with the Russians, borrow from them, and adopt new expressions for such ideas as they cannot render into their own dialect. The Russo-Greek form of Christianity was introduced among the southern Ostiaks about the year 1632, but their mode of life makes them very remiss in the observance of religious ordinances; and, what is worse, they have become addicted to the vice of inordinate drinking. The northern Ostiaks are still pagans, though they practise baptism, as well as their more enlightened brethren, and give their children Russian names; the women veil themselves in the presence of strangers. Their general employments are hunting and fishing, and many of them live in a kind of simple affluence. The Ostiak yokes but two dogs to his sledge, unlike the natives farther east, who drive five or six pairs in a train. The bear enjoys among them a kind of religious veneration. They offer sacrifices before setting out to hunt this formidable animal; and, after having killed one, they celebrate his memory by an expiatory fete, and by songs addressed to his manes.

The *Samoiedes* occupy an immense extent of moss-covered marshy territory, which stretches along the coast of the Arctic Ocean from the river Mesen near Arkhangel, to the Khatunes, upwards of 2000 miles in length, and from 270 to 550 in breadth. Their ordinary stature is from four to five feet; they are generally broad, with very short legs, a large and flat head, a flat nose, the lower part of the face projecting, a wide mouth, large ears, a very scanty beard, and small, black, angular eyes. To these attractions they add an olive coloured skin, shining with grease, and black and bristly hair, which, though it is small in quantity, they arrange with great care. The women have an agreeable shape and mild features, and arrive very early at puberty. The girls are generally marriageable at eleven or twelve, but they have few children, and cease bearing before thirty. The women are considered as impure beings, and are obliged to perfume themselves before passing the threshold of the cabin. The Samoiedes are nomadic, and move frequently from place to place. They have much in common with the Ostiaks, but maintain a better character, and are less addicted to drinking. Their wants are very limited; hunting is their chief employment; and their wealth consists in rein-deer, the poorest Samoiede possesses a hundred, while the rich man's herd often amounts to 10,000. They all quit the seashore in winter, when the ice sets in, and wander with their herds to the mossy hills of the interior. They are gross idolaters, their only worship being a species of fetichism. Their magicians are adroit jugglers; but, in supporting their assumed character of inspired persons, many of them become really frantic. Their amusements consist in dances, in which they keep time to a nasal sort of song. They are divided into different tribes, of which the *Obdorians* and the *Joorahs* are the most remarkable. They have a peculiar language, apparently unmixed with any other. It is believed that the whole Samoiede race have moved down the course of the Ienisei; for there are still found in the country which stretches from the upper Ienisei and the Abakan, to the west end of lake Baikal, some small tribes which use dialects containing a great mixture of Samoiede words, or even belonging entirely to that language. Such are the *Soyetes*, who are said to be numerous in Chinese Mongolia; the *Kaibales*, who leave the dead bodies of their children exposed on the trees, and who dispute with the mountain hare the heaps of hay provided by that intelligent animal; the *Matores*, the *Karagasses*, the *Kamachinzes*, and the *Ostiaks* of Narym. It might appear natural to consider the Ostiaks of the Ienisei or of Pumpokol as a link of the chain; but it appears that this tribe of hunters has formed for themselves a peculiar jargon which defies the researches of historians.

The *Yakûts* inhabit the lower basin of the Lena from the neighbourhood of Yakutsk to the ocean, and appear to be degenerated Tartars, who have fled before the conquering Mongols. They call themselves *Socha*, in the plural *Sochalar*; and there is still among the Tartars of Krasnoyarsk a tribe which bears the same name. The Yakûts wear long hair, and short and open dresses. In want of attention to cleanliness they yield to none of their neighbours; and in their general habits of life they very much resemble the Tongooses, though they are considered to be less daring and active. They

are exceedingly superstitious; they reckon thirteen kinds of evil spirits, with the dread of which they are perpetually haunted; and the influence of their magicians is therefore unbounded. They have made considerable progress in cultivating the ground; and have introduced the rearing of cattle and horses, and have attained, not merely a scanty subsistence, but even some degree of comfort. They are now all baptised. But though they are properly a pastoral people, whose chief riches consist in the number of their horses and beeves; yet the abundance of fur-clad animals in their vast forests, and the profit which they make by selling them to the Russians, have induced them to turn much of their attention to the chase, of which many of them are passionately fond, and which they follow with unwearied ardour and admirable skill. The *Yookaghirs* inhabit the country between the Lena and the Kolyma; but geographers are in doubt whether to number them among the Samoiedes or the Yakûta, or among the tribes still to be enumerated. They live by the chase and the produce of their rein-deer, and are all baptised. They were formerly a warlike and formidable people; and the Russians found great difficulty in subjugating them. They are now all but extinct as a pure race, those who now bear the name being much mixed with Russian blood.

The *Chuckchee* or *Tschuktschi* possess the north-eastern extremity of Siberia, from the river Tshaun to Behring's Straits. They generally live in small camps near the rivers; their dwellings are dirty and their food disgusting. The dress of the women consists of a deer's skin hung from the neck, so that by untying a single knot, they are made completely naked. The Chuckchee have large features, but have not the flat nose and small eyes of the Kamtschatdales. They are expert slingers, and display much courage and address in whale fishing, which they conduct in the European manner, without having received instructions from that quarter. They still preserve their independence, but live on good terms with the Russians, and meet them for purposes of traffic at the annual fair of Ostrosya in February, where they exhibit a great degree of adroit management. The staple article which they purchase seems to be tobacco, in return for which they give morse-teeth, and various skins and furs. They are a bold and fearless race, extremely jealous of Russian traders and emissaries, and far from unintelligent. The *Shelagi*, near Skelatskoi-nosa, the *Ankuchalat*, and the *Peyerskoi*, on the islands of the Frozen Sea, who are little known, belong to the Chuckchee family. The Chuckchee are, however, in many respects a peculiar race, and are very little known. A great number of them have been baptized, but they remain as completely heathen as before, without the slightest notion of the doctrines or the spirit of Christianity. Their inducement to present themselves for baptism is solely to obtain the presents which are made to them on the occasion. They formerly all lived on the produce of their rein-deer; but those among them who happened to lose their herds by sickness or other causes, settled by degrees on the coast, and employed themselves in killing whales, seals, and walruses. They are now divided into two classes, the settled Chuckchee, who live on the coast, and the nomadic Chuckchee, who inhabit the hills. The latter, who form the bulk of the people, call themselves *Tenaygrik*. The two classes live on good terms with each other, and exchange their different commodities. The inhabitants of the coast furnish the nomadics with whale flesh and bones, walrus skin, and train oil, which is a favourite article of food, and receive in return rein-deer skins, both raw and made up into clothing. The coast of the bay of Anadir is inhabited by a people very distinct from the Chuckchees in figure, features, clothing, and language. They are called *Oukilou* (sea people), and are said to have formerly occupied the whole coast from Cape Schestakoi to Behring's Straits; and every where along this tract are the remains of huts, constructed of earth and whale bones, quite different from those of the Chuckchee. Captain Billings thinks that their language has a close affinity to that of the Aleutians of Kodiak, who are of the same stock as the Greenlanders or Esquimaux. They pass Behring's Straits in baidours or boats formed of skins; but the thick fogs and frequent storms render the passage dangerous in such frail vessels, and they therefore usually stop at the Gwoosdew islands.

The *Koriaks* live near the rivers Anadir and Oloutoria, between Kamtschatka and the country of the Chuckchee; who live by hunting, and the produce of the rein-deer. The Oloutorai speak a smooth language; but, in general, the idiom of the Koriaks approaches to both the Chuckchee and the Kamtschatdale.

The *Bashkirs* or *Bashkurs* are found in the provinces of Orenburg, of which the greater part belongs to them, and Perm, on the south-western borders of Siberia, speak a Tartar dialect, and are Soonee Mahometans; but it is difficult to trace their origin. They seem to form an intermediate link between the Finns and the Turks; their customs and habits are of Tartar origin, except the dress of the women, which is evidently Finnish. They have no longer any military chieftains; and have, for nearly a century, been good subjects of Russia. In disposition they are faithful, docile, and ready to oblige; and the traveller may pass through their country as safely as through any part of Europe. By an imperial ukase issued in 1832, they have been declared the owners of the gold mines on the east side of the Urals, on payment of one-tenth of the produce to the crown. Most of them subsist by rearing cattle, and a few by agriculture. They pass the winter in villages, living in clean wooden cabins; but in summer they are all abroad in the open country, and live under tents of felt. They may almost be said to live on horseback; but unwearied and skilful in all that pertains to horsemanship, they are dull and lazy in everything else; yet they are very expert falconers; they teach their small falcons to pounce on hares, while a larger kind, called berkuti, are trained to kill foxes, and even wolves. These birds they rear and train in considerable numbers, not only for their own use, but for the purpose of selling them to the Kirghis, and other wandering tribes of the steppes. They are divided into 12 cantons, subdivided into tribes or clans, jurtes, and villages. They pay no taxes, but are bound to provide post-horses, supply men for the frontier cordons, and hold themselves ready for any foreign service. They are, however, but indifferent soldiers. They cherish an inveterate hatred against the Cossacks, whom they excel both in courage and muscular power. Their principal weapon is the bow, in the use of which they are very expert, but fire-arms are rarely found among them.

INDUSTRY AND COMMERCE.—Besides the agricultural labours which are carried on in places suitable for the produce of grain, with the hunting and fishing, and rearing of horses and cattle, that form the chief occupations of the native tribes, the industry of the Russian settlers is principally directed to the working of the mines of the Urals, Kolyvan, and Nertshinsk, and the manufacturing of iron, copper, utensils of these metals, leather, shagreen, and carpets; arms, glass, salt, saltpetre, pitch, isinglass, and felts. The art of lackering has been brought to great perfection at Tagilisk, on the Urals, and the lackered wares are generally ornamented with paintings, the execution of which was for a long time wholly intrusted to such of the uninstructed workmen as seemed to manifest a taste for drawing; but of late years the proprietors of the mines and iron works have sent serfs into Europe to study the art of drawing and colouring. Some of these have even spent years in Italy, and afterwards returning to Tagilisk, have established schools of design for the benefit of their brethren. Among other branches of industry carried on at Iekaterinburg, is the cutting and engraving of precious stones. Amethysts, topazes, tourmalines, with quartz crystals of large size, are cut and polished with great skill; and are then inelegantly, though ponderously, set in the gold of the country. Besides the great abundance of gems found in the neighbourhood, many are brought from all parts of Siberia; and the trade of the lapidary is here carried on in the most extensive manner possible.

Tobolsk is the centre of Siberian commerce. The produce of the mines, fisheries, and hunting expeditions, and the rude articles supplied by the native tribes, as furs, peltry, mammoth bones, morse teeth, dried and salt fish, are here met with and exchanged for European and Chinese goods

and manufactured articles, woollen and cotton cloths, silk stuffs and the like; most of which, however, are drawn from China, the preference being partly due to their cheapness, and partly to the skill with which the vigilant Chinese merchant adapts his commodities to the wants of the country. Tea, likewise porcelain, silk, musk, and rhubarb, are imported by them to a considerable extent. A great trade is also carried on at the annual fair of Irbit, 100 miles N.E. of Iekaterinburg, which is the best frequented and the most important of all Siberia. The commerce eastward of Tobolsk is carried on through Kiakhta, Irkutsk, and several other intervening towns; the whole distance between Tobolsk and Kiakhta, with the exception of about 60 miles, being navigable by the branches of the Angara, the Ienisei, and the Obi; and although the route is exceedingly circuitous and tedious, amounting to no less than 8000 miles, the profits of the trade carried on with the Siberian tribes on the banks of the streams are considered a sufficient compensation for the time and trouble spent on the journey. From the south the merchants of Turkestan bring silk and cotton stuffs, precious stones, and other articles. Formerly caravans of some thousands of camels used to arrive annually at Omsk, Petropaulovski, Orenburg, and other frontier towns of western Siberia. But at present the dried fruits of Bokhara, the rich shawls, raw cotton, and other produce of the southern countries, are carried direct to Nishnei-Novgorod, in European Russia. Still, however, small caravans occasionally travel southwards from the Siberian frontier, taking with them otter and seal skins, linen, and bar-iron. The merchants, who are chiefly Tartars, though a Russian sometimes ventures to accompany them, assemble at Semiyarsk on the Irtish, about 600 miles S.E. of Tobolsk, and usually start in May, while the pools and streams in the desert are not yet completely dried up. The place to which they direct their journey is Tashkend in Turkestan, at a distance of two months travelling from Semiyarsk; the first 200 miles being over a wild and hilly country, across the Karakaralul mountains, which are thickly covered with forests of firs, willows, and black poplars, and infested by bears and wild boars; after leaving which they pass through a woodless country till they reach Tashkend. To the north, again, Obdorsk, 50 miles from the mouth of the Obi, is a point of the greatest importance to the Russian fur traders, and is the centre of the commerce carried on with all the tribes who possess the country from Arkhangel to the Ienisei. The traders begin to assemble in December, but the active traffic, or the fair, does not take place till February, when the yasak, or tribute of skins, is paid by the Ostiaks of Beresov. Besides other useful articles, great quantities of meal and baked bread are sent northward by private traders from Tomsk and Tobolsk, besides what is despatched on account of government, all of which serves as money in the traffic with the Ostiaks and Samoiedes, who are very fond of such luxuries. Petropaulovski, in Kamtschatka, is the principal port on the Pacific Ocean, but its trade is monopolised by the Russian American Company, who have also factories, or counting houses, at Moscow, Irkutsk, Yakutsk, Okhotsk, Kazan, Tomsk, and other places. Peltry forms the principal article of the trade.

DIVISIONS.—Siberia is divided into two great regions, called Eastern and Western Siberia, which are placed under the charge of governors-general, who reside respectively at Irkutsk and Tobolsk. Western Siberia includes the subordinate governments of Tobolsk and Tomsk, and the province of Omsk; Eastern Siberia includes the governments of Irkutsk and Ieniseisk, the province of Yakutsk, and the districts of Okhotsk and Kamtschatka. To these we must add those parts of the governments of Perm and Orenburg which lie to the east of the Urals, and also the country of the Chuckchee, who are independent. These divisions, with their principal towns, are exhibited in the following table:—

Provinces.	*Towns.*
I. WESTERN SIBERIA.	
TOBOLSK, .	TOBOLSK, Tumen, Tûrinsk, Ialûtorûsk, Tara, Kûrgan, Ishim, Sûrgût, Beresov, Pelym, Obdorsk.
TOMSK, . .	Tomsk, Kainsk, Smeinogorsk or Schlangenberg, Barnoul, Kolhyvan, Tomskoi-Savod, Riddersk, Sousûnsk, Bisk, Narym, Kûznetsk.
OMSK, . . .	Omsk; Petropaulosk, the principal fortress of the line of Ischim, and containing an important custom-house; Semipolatinsk, Ustkamenogorsk, Semiyarsk.
II. EASTERN SIBERIA.	
IRKUTSK, .	Irkutsk, Selinginsk, Kiakhta, Nijnei-Udinsk, Wertshinsk, Nertshinskoi-Savod, Troitskosarsk, Karensk, Balagansk, Bargousin, Vershnei-Udinsk.
IENISEISK, .	Krasnoyarsk, Kansk, Abakansk, Atshinsk, Ieniseisk, Tûrûkhansk, Minûssinsk, Khantanskoi.
YAKUTSK, .	Yakutsk, Vilûisk, Olekminsk, Olensk, Oustie-Olenskoie, Verakholansk, Vitimskoi, Sredne-Kolymsk, Nishnei-Kolymsk, Zachiverak, Jigansk, Oudskoi.
OKHOTSK, .	Okhotsk, Ijikhinsk, Kamenoi-ostrog.
KAMTSCHATKA,	Petropaulovski, Versné-Kamtschatsk, Nijné-Kamtschatsk, Aklansk, Bolshertetskoi, Tigilsk.
PERM, . . .	Iekaterinburg, Neviansk, Verkhoturia, Irbit, Tagilisk, Bogoslovsk, Kûshva.
ORENBURG, .	Troitsk, Taheliabinsk, Verkho-uralsk.

TOBOLSK, formerly the capital of all Siberia, is situate on the right bank of the Irtish, near its confluence with the Tobol, in N. lat. 58° 12′, and E. long. 68° 15′. It is divided into the lower and the upper town, the former of which stands on the banks of the river, and is much exposed to floods; the latter occupies the top of a steep ridge which rises considerably above the plains, and consequently the white houses and the church towers are visible at a great distance. The lower town is only 128, the upper 357 feet above the level of the Arctic Ocean. Except the government buildings and two churches, the town is built wholly of wood, and even the streets are paved with that material. Its population in 1833 amounted to 17,558, of whom a considerable number are exiles, who live here not uncomfortably. The variety and abundance of wild fowls in its markets are no where else to be equalled; while the fisheries of the Obi on the one side and the herds and flocks of the pastoral tribes on the other, yield their respective supplies at the cheapest rate. It is also well supplied with manufactured goods of every kind, and with tea, and colonial produce from Europe and China. Literature, science, and the polite amusements of Europe, have also made considerable progress among the citizens, and contribute greatly to their amusement as well as instruction. The inhabitants endeavour also to heighten the graces of the West by a mixture of Siberian merriment, the quadrille and the gallopade being accompanied by singing, while the ladies display at once their figures and their voices. Every pretext, religious or social, is seized on for a feast, a ceremony, or a public show. Marriage gives occasion to four ceremonies; first comes "the meeting;" then "the near inspection;" afterwards "the shaking of hands;" and lastly, "the maiden's feast," which completes the nuptial rites. *Tumen*, 130 miles W.S.W. of Tobolsk, is a town of 8000 inhabitants, which enjoys a considerable trade. *Beresov*, 420 miles N. of Tobolsk in a direct line, or 600 by route, is a fur trading settlement of great importance, inhabited by several respectable merchants and exiles. It stands at a little distance from the left bank of the Obi, on its affluent the Sosva; and no other place can vie with it in the active, enterprising, and kindly spirit of its people. Its situation is very pleasant, and it contains a population of 1500, most of whom subsist by trade. It is historically important, as being the place where the three favourites of Peter the Great, Osterman, Dolgorukof, and Menzikoff, ended their

days in exile. In 1921, the remains of Menzikoff were found buried deep in the frozen earth, in a state of perfect preservation. *Obdorsk*, a paltry wooden town, 50 miles from the mouth of the Obi is, nevertheless, the centre of all the trade carried on with the Samoiedes and the Ostiaks of Beresov. From Tobolsk to Beresov the river is easily navigated downwards in eight days by the current alone: upwards, the navigation is favoured by the prevalent north winds, and by the counter currents near the banks.

Tomsk, 630 miles E. by S. of Tobolsk, a city with 10,577 inhabitants, and the capital of a province, though it contains several churches and many handsome buildings, both public and private, is, nevertheless, a miserable place. It stands on the right bank of the Tom, near its mouth, has a military school with 400 students, a provincial college with a considerable revenue, but without either masters or scholars, and also a very neat public garden. *Barnoul*, 260 miles S. by W. of Tomsk, contains 1200 houses, with 9000 inhabitants, and is the seat of administration for the whole of the mines of the Kolyvan line, the governor being solely dependent upon the imperial Cabinet. It is also the chief smelting place, and enjoys the civilization of a European city. The mining district subject to the authorities at Barnoul extends southwards about 300 miles towards the Irtish and the frontiers of Chinese Tartary. The silver mines of the *Schlangenberg* (Snakehill) are situate 190 miles to the south of Barnoul. As the country rises to the south its climate does not grow milder in that direction, but the winters are at least as severe, and the summers as short as they are some hundred miles farther north. The hills are in general but thinly wooded; and, on that account, notwithstanding the difficulties arising from great distance and inadequate water conveyance, the ores have to be carried down to the smelting houses in the lowlands, chiefly to Barnoul. The wealth and population of this mining district increase rapidly to the south. The farmers and miners of the southern valleys, who have the opportunity of trading with the Chinese, wear silks and fine cloth with gold ornaments and jewellery; and in their houses and their mode of living, manifest a degree of opulence unknown to those of equal rank in Russia. *Kainsk*, nearly midway between Tomsk and Omsk, is a neat town in the centre of a low brushwood forest, and contains 600 houses and 2500 people.

Omsk, the capital of a province, is situate at the confluence of the Om with the Irtish, 290 miles S.E. of Tobolsk, and 490 W. by S. of Tomsk. It is composed of a fortress, and a town with its suburbs, and has a garrison of 4000 men, with a flying artillery of forty pieces. The fortress is the largest of the three divisions, is a neat place, with buildings of brick, and surrounded by a mud wall and ditch. It contains an Imperial military college for the children of the military who form the army of Siberia, also a school for the children of Cossacks. The town and suburbs contain some neat buildings, but are not otherwise remarkable. The total population in 1833, amounted to 11,428. *Semipolatinsk* is a fortress on the right bank of the Irtish, 400 miles S.E. by S. of Omsk. The town stands on a pleasant eminence, commanding a view of the lofty mountains to the south, but the surrounding country is uncultivated and infested by robbers. It contains 1000 soldiers and 2000 civil inhabitants.

Irkutsk, the capital of Eastern Siberia, is situate on the left bank of the Angara, 1246 feet above the level of the sea, 24 miles N. from the lake Baikal, and 1500 E. by S. of Tobolsk, in lat. 52° 16′, and long. 103° 30′. It is the handsomest in external appearance, and the most elegant as to society of any place in Siberia. The houses are chiefly of wood; but the streets are wide and spacious; some of the public buildings are very fine, and among these there are twelve handsome churches. The population, by the census of 1833, amounted to 13,522. The principal inhabitants are merchants, and the civil and military officers of Government. Both classes being in constant communication with Europe, have introduced into this remote quarter, whatever is most recent in literature, as well as in music and the drama. A small library has been formed, and a collection or museum of natural history. The shops are filled with nankeens, porcelain, lackered ware, and other articles of Chinese workmanship. The Russian-American Company have a counting-house here and large magazines; and the town may even be regarded as the grand mart of the Russian commerce with China. It is also a bishop's see. The Angara is here deep and rapid, and the approach along its stream to the Baikal may be considered, says Captain Cochrane, one of the grandest sights in the world. The river gradually widens as it draws nearer the lake, till at length it forms a pretty inlet where vessels are laid up. *Selinginsk*, once an important place on the Selinga, is now much decayed, and contained, in 1821, only 200 houses and 1000 people, besides the garrison. *Vershnei-Udinsk*, a large, populous, and flourishing town on the right bank of the Selinga, 200 miles E. of Irkutsk, and 70 N.N.E. of Selinginsk, contains many handsome brick houses, churches, and public buildings, and has risen on the ruins of Selinginsk as the grand mart between Irkutsk and Kiakhta. It contains a strong garrison, 400 houses, and about 2600 inhabitants. *Kiakhta*, a neat and regularly built town of 450 houses and 4000 inhabitants, on the right bank of a little brook of its own name, an affluent of the Selinga which forms the border of the Russian and the Chinese empires, about 200 miles S.E. of Irkutsk. It is the only place on this frontier, where the Chinese Government allows its subjects to trade with Russia; and the Chinese town of Maimatshin, 200 fathoms from the old town of Kiakhta, is their frontier station. *Werchinsk*, 500 miles E. of Vershnei-Udinsk, is called a city, but is ill-built, widely scattered, badly situate, and worse inhabited, containing about 200 houses and 1000 people. It is the head-quarters of the great penal settlement of Siberia, all the worst criminals being sent to work in the mines of this district. The majority of them are kept at the Bolshoy-zavod, a great fabric, 180 miles E. from the city, situate in a deep hollow, and surrounded by high and barren rocks, as bleak, dreary, and inhospitable as can be imagined.

Krassoyarsk, the capital of the province of Yeniseisk, is situate on the left bank of the Yenisei 300 miles N.W. of Irkutsk. *Atshinsk*, 90 miles west, is a thriving trading town.

Yakutsk or Iakutsk, is situate on the left bank of the Lena, 1200 miles N.E. of Irkutsk, in a bleak and dreary region, with a very cold climate. It is an irregularly-built town, but being the seat of the fur trade, and of a great commerce with the natives, it contains so many as 4000 inhabitants. Iakutsk has all the character of the cold and gloomy north. It is situate on a barren flat near the river; the streets are wide, but the houses and cottages are poor. There is not a tree or a bush to be seen, and nothing to indicate summer but the absence of snow. It contains about 500 houses, 5 churches, and a convent. Yakutsk is the centre of the inland trade of Eastern Siberia; furs, walrus and mammoth teeth, are brought to it for barter, during the ten weeks of summer, from the most distant places to the east and north; and as soon as the Lena is clear of ice, merchants begin to arrive from Irkutsk, bringing with them tobacco, tea, sugar, brandy, rum, Chinese cotton and silk stuffs, yarn, coarse cloth, hardware, glass, &c. The Russians live entirely by trade, and have abandoned all sorts of handicraft to the Yakuts, among whom there are now excellent carpenters, cabinetmakers, carvers in wood, and even painters.

Nishnei-Kolymsk stands on the eastern side of an island in the Kolyma, about 150 miles from the mouth of the river. It is a large town for this part of the world, containing nearly 50 houses and 400 people, most of whom are Cossacks, with a few pedlars and three priests.

Okhotsk, a small town with a harbour on the western side of the sea of Okhotsk, maintains a considerable trade with Kamtschatka and the Russian settlements in North America, the produce of which all passes through it, as the only sea-port of Siberia on the Pacific Ocean. *Petropaulorski* (pronounced Petropaulskh), the capital of Kamtschatka, and the residence of the government and commercial agents, is a town of thatched log-houses, of very poor appearance. Its harbour is a safe land-locked bason, on the eastern side of Awatska Bay, capable of containing six or eight ships of the line in per-

fect security. Awatska Bay is 30 miles in circumference, with a general depth of water of 12 or 14 fathoms on a level bottom of soft mud; and abounds with fish of the finest quality. Its entrance is four miles long and a mile and a half wide at the narrowest part, with a lighthouse on the south-east point, in lat. 52° 52′ N. lat., and 158° 47′ E. long.

Iekaterinburg or *Katherinenburg*, is situate on the eastern slope of the Urals, 25 miles east of the Bilimbayevski pass, and 976 feet above the level of the sea, in the government of Perm. It contains about 2000 houses, chiefly built of wood, though some are of stone, and the great manufactories are of brick, roofed with thin iron plates. It contains the college of mines, which superintends all the foundries maintained by it on both sides of the Urals. The town presents, in a remarkable degree, the appearance of comfort and thriving industry. Many of its houses would be deemed ornamental in the most handsome towns of Europe; yet the greater number of its inhabitants are serfs, whose annual remittances of tribute to their owners amount to princely revenues. It is 320 miles W. by S. of Tobolsk. *Tyumen*, on the banks of the Tara, 180 miles from Iekaterinburg, is a larger town than the latter, and is situate in a fertile country.

Seas, Bays, and Gulfs.—*Sea of Kara*, on the east side of Nova Zembla. *Sea of Obi*, forming the firth or estuary of that river, is about 400 miles long by 80 or 90 wide. *Behring's Straits* form the communication between the Arctic and the Pacific Oceans, separate Asia from America, and are about 50 miles wide, with a small island in the middle. A constant current sets through the straits from the Arctic into the Pacific Ocean. *Gulf of Anadir*, to the south-west of Behring's Straits. *Awatska Bay*, already described. *Sea of Okhotsk*, a large inland sea, between Kamtschatka and Okhotsk, is unnavigable in winter.

Capes.—*Severo-Vostochni*, the most northerly point of the continent of Asia. *Stekatskoi-noss*, in the country of the Chuckchee, in long. 175° E. *Tschuktschi-noss* or *East Cape*, forming the western side of Behring's Straits, and being the most easterly point of Asia. *Cape Lopatka*, the most southerly point of Kamtschatka.

Islands.—*Kotelnoi* or Kettle Island, *Fadei*, *Novaia-Sibir*, *Stolbovoi*, *Iterchankvoy*, *Bear Islands*, and *Burney's Isle*, in the Arctic Ocean; *Diomedes*, in the middle of Behring's Straits; *Evoogisona* or *Clerk's Island*, to the south of the strait; *Matwi*, *St. Matthew* or *Gore's Isle*, south-east of the Gulf of Anadir; *Karagui* and *Behring's Isles* (with 110 inhabitants in 1827) on the east side of Kamtschatka; and the *Kurile Islands*, which extend in a long line of 900 miles across the mouth of the sea of Okhotsk, from Cape Lopatka to Ieso. Their number is not accurately known; but they contain eight known volcanic mountains, some of which are in a state of activity. Some of the islands are uninhabited from want of water, while others rival Kamtschatka in the abundance of game and fish. The few inhabitants are peaceable and well disposed; they live very much in the same manner as the Kamschatdales. The northern portion of them are subject to Russia, and pay a small tribute in furs and sea-calves; the southern islands are claimed by Japan.

Kamtschatka is a large peninsula attached to the north-eastern extremity of Siberia, between 51° and 62° N. lat., and 166° and 167° E. long., about 800 miles long, from 100 to 250 broad, and containing about 80,000 square miles. It is traversed lengthways by a chain of volcanic mountains of great elevation (see *ante*, 629), many of whose summits are in constant activity. The climate is very severe; but not insalubrious; for the inhabitants are robust and long-lived, and have few diseases. Rye, barley, potatoes, cabbage, turnips, hemp, and flax may be raised successfully; but most of the people are devoted to hunting and fishing. The forests contain birch, fir, larch, poplar, cedar, willow, and juniper. The animals usually hunted are bears, lynxes, otters, rein-deer, foxes, sables, beavers, &c., and the number of skins annually exported is about 30,000, chiefly those of foxes and sables. There is also other game of several varieties, and water fowl, whose eggs, saturated with oil, constitute the principal part of the food of the inhabitants. The fish comprise salmon, cod, herrings, besides seals, walruses, and whales. The trade is very limited; labour is confined to the supply of temporary necessities; domestic comforts are little known or cared for, and affluence is seldom attained even by the most provident and most industrious. Taxes are paid in skins; furs and dried fish are exported from Petropaulovski, chiefly by Russians and Dutch, who bring in exchange rice, flour, coffee, sugar, brandy, and whisky. The Kamtschatdales, the indigenous natives of the peninsula, are a people of short stature, with firm shoulders, large heads, long and flat faces, small eyes, small lips, and but little hair. Their women have fine skins, very small hands and feet, and a tolerably well proportioned figure. In their independent state they were very warlike and ferocious; but now, under the Russian sway, they have become a peaceable and honest, but lazy, drunken, servile race, careless of futurity, and addicted to coarse sensuality. The southern Kamtschatdales have both their winter and summer cabins raised on stages, twelve or thirteen feet high, for the purpose of drying their fish. The chief occupation of the men is fishing. In the northern part of the country the cabins are subterranean holes which retain the heat; but the closeness and the filth are insupportable by those who are not accustomed to them. The people are subject to few diseases; their most common complaints are scorbutic and venereal; and the glare of the snow occasions frequent inflammation of the eyes. In 1831 there were in the whole territory of Kamtschatka only 2700 natives and Aleutians.

EMPIRE OF JAPAN.

THIS empire consists of a group of large islands in the Pacific Ocean, to the north-e
between 30° and 42° N. lat., and 128° and 143° E. long. The principal islands are name
kute, *Kiu-siu*, *Awadsi*, *Sado*, and *Ieso*; besides which, the Japanese have also colonised
portion of the island of Saghalien, and claim dominion over the southern half of the I
Niphon is upwards of 800 miles in length, but of irregular form, and of various breadt
islands are very considerably smaller; and the whole superficial area of the empire is
about 260,000 English square miles. The principal islands have a very uneven surface,
with rocky hills. Niphon is traversed throughout its whole length by a regular chain of m
highest peak of which, named Fusi, exceeds 12,080 feet; but the elevation of the chain is
low, as to admit of cultivation up to the watershed of its streams. Several of the summ
volcanoes; Wunsondaki, east of Nangasaki, is the most formidable at present known;
phon, was formerly an active and very much dreaded volcano, but has been quiescent for
century. Earthquakes are frequent and destructive; thermal and mineral springs ar
occurrence. The metallic wealth of the country is said to be very great, comprising cop
lead, tin, iron, gold, and silver. The streams have very short courses, and are for t
rather torrents than rivers. The climate varies extremely from north to south, being i
in the north, while in the south it is nearly as warm as in the south of France, though m
In Kiu-siu, and the southern parts of Niphon, the thermometer ranges between 29° and
heit, 80° being the average in the middle of summer, and 35° in the coldest months of
cold, however, is much increased in winter by the prevalence of north and north-east win
summer heats are modified by breezes from the south and south-east. Rain is very freq
canes also and storms are of frequent occurrence, and are sometimes very violent.

Few plants, except on the hills, are found in a natural state; and the face of the cou
the sides of the mountains, is most diligently cultivated. In the southern districts ric
very large quantities, and forms the principal article of food among the inhabitants. W
partially cultivated, and is held in little estimation. Barley, buckwheat, beans, potat
pumpkins, and cucumbers, are raised in great abundance; and the fruit trees of southern
orange, lemon, vine, peach, and mulberry, are common and very productive. Ginger an
the principal spice plants; cotton is grown in considerable quantity, and tobacco, in the s
to rice, however, tea is the grand object of cultivation; and not only are there large planta
shrub, but the hedges on the farms of Kiu-siu consist of it, and supply the drink of th
Oaks, firs, and cypresses, are common, but not in large masses; timber is supplied fr
Saghalien. There are also the gum varnish tree, the camphor laurel, and others; many
are extremely beautiful. Among the wild animals may be enumerated bears, boars, foxe
monkeys, hares, rats, mice, and two small animals of the weasel tribe peculiar to the
called *itutz* and *tin*. The people eat very little animal food; they live chiefly on fish, and
pally in cotton and silk; the pasturing of cattle is consequently not much attended to. B
beeves are not numerous, and are used only for draught labour; the sheep are but few,
progeny of a stock introduced by the Dutch. The horses are small, and used only by the no
are neither asses nor mules; and pigs are found only in the vicinity of Nangasaki. Dogs a
and held sacred; cats are even more esteemed by the Japanese ladies than by those of Gr
Birds are numerous, and of many species; falcons are highly valued; and pelicans, cranes,
are considered useful in destroying vermin. The pheasants, ducks, geese, teal, storks, pig
larks, and other small birds are numerous; but the common crow and the parrot have neve
Snakes are not unfrequent, and one variety, the *aurabami*, is of enormous size; there are a
and lizards, scorpions, centipedes, and white ants. The seas contain large quantities of
afford a principal article of food to the inhabitants, and give employment to numerou
fishermen. The salmon, herring, cuttle-fish, eel, perch, and many others, are caught in
tities; oysters also, of a peculiar and delicious kind, are extremely abundant, and are use
clusively as food by many of the poor people about Iedo, where the fisheries are situate.
narwhals often visit the coasts, and are caught by the harpoon; the flesh is eaten, the balei
various purposes, and ambergris is extracted from the entrails.

The people seem to be a mixed race of Mongolian and Malay blood, though they boast o
rigines. They are in general well made, active and nimble, with yellow complexions, s
set eyes, short flat noses, broad heads, and thick black hair. They are divided into ei
princes, nobles, priests, soldiers, civil officers, merchants, artizans, and labourers; whi
distinct, with all the strictness of caste, each person following invariably the profession of
Polygamy is not practised even by the nobles, and much more freedom is permitted to the
in China; nor do the women compress their feet, though they bandage their hips so tightl
their feet inwards, and give themselves a very awkward gait. Concubines are commo
hold a lower rank than wives. Prostitutes are found in every town in greater numbers
other country of Asia, except India; and so little discredit is attached to the character, t
visited by married women, and are received without remark into respectable society. T
are said to be intelligent, and desirous of knowledge; they study medicine and astronomy
astronomical observations are as correctly made as their rude instruments will allow.
are compiled at Miyako, the great centre of the national science and literature. History h
ten with great care by some of their learned men; their works on botany and zoology
descriptions, and tolerable engravings; poetry is cultivated; and there is a prevalent taste
The Japanese language has no relation to the Chinese, nor indeed to any known Asiatic
except that of the Ainos, who inhabit Ieso and Saghalien. It is polysyllabic, and has an
47 letters, which are written in four different forms, one of which is used exclusively b
another by women. Some of the inhabitants are also acquainted with Chinese. The est
state religion is that of Buddha; but it has many varieties, and much superstition prev
its votaries. There are monks of various orders, some leading a secluded and ascetic
infesting the towns and highways while on their way to visit different temples. The
large numbers of religious beggars and singing girls, who go about in the habit of num
considerable sums. The sect of Sinto, which professes the doctrines of Confucius, has
imported from China; but its followers are very few. An older form of religion than eith
has maintained itself from the most remote antiquity to the present day, not only in the
peasant, but in the palace of the Mikado; which is called the *Sinto* or *Sin-sio* (faith in
according to Siebold, *Kami-no-mitsi* (way to the gods.)—(*See ante*, p. 126.) This ancien
sider the founders of the empire as the immediate descendants of the Supreme God, who c
from heaven into Japan; and have continued without interruption to exercise sovereign

the race being continued by adoption, when progeny fails the reigning emperor. They believe the spirit of their ruler to be immortal; a doctrine which confirms the faith of the people in the immortality of the soul; in connection with which they also believe in future rewards and punishments. The Supreme Being is too great to be addressed in prayer, except through the mediation of the Mikado, the son of heaven, or of inferior spirits called *Kami*, to whom temples are specially erected. Various kinds of food are offered to the Kami, and anciently even human victims were immolated to appease the wrath or secure the favour of spirits. They pay great reverence to the fox, as the abode of a spirit, and consult him in difficult affairs. The priests of this sect are allowed to marry. The amount of the population has been variously estimated; but is positively unknown to any European. Balbi, on the assumption that Japan is equally populous with China, rates the population at 25,000,000; but if China really contains more than double the number which this geographer assigns to it, the population of Japan should, on his principle, amount to fifty or sixty millions.

The government is a hereditary absolute monarchy. The sovereignty was formerly vested in an emperor called the *Mikado* or *Dairi-sama*; but in A. D. 1593, the emperor's Seogun, or military commander, called also the *Kubo*, usurped the chief civil power; and the Mikado has been ever since a mere tool in respect of the civil government, though he has been left the entire superintendence of religion and education. All public enactments, however, must have his sanction before they become laws; to him alone belongs the power of conferring honorary distinctions. He lives at Miyako, secluded in a large palace called the *Dairi* or Imperial Court, surrounded by numerous officers, who treat him with almost divine honours. His income, however, is small, being now restricted to the taxes levied in Miyako and its district, a certain allowance from the Kubo, and fees paid for dignities and offices. His income, indeed, is so small in proportion to the number of his dependents, that he may be said to live in splendid poverty. The Kubo keeps a guard and a governor over him, but acknowledges himself to be the Mikado's first subject, and sends every year an embassy to acknowledge his inferiority with rich presents. The Kubo holds his court at Iedo; exercises full sovereignty over the lives and properties of his fellow subjects; and directly administers the local government of the five great towns of Iedo, Miyako, Osaka, Sakai, and Nangasaki. The rest of the empire is divided into provinces, and smaller districts which are governed by daimios and siomios, appointed by the Kubo; some of whom are so dependent on him as to be obliged to leave their families in the capital as hostages for their good conduct, and even to reside there themselves during half the year. But they receive the revenues of their territory, with which, besides maintaining their state and dignity, they keep an armed force for the preservation of order, make and repair roads, and erect other public works. They usually reside in the large towns, and occupy castles defended by strong gates and lofty towers, which are the marks or symbols of their dignity. Even the least dependent of the daimios are obliged, once a-year, to repair to Iedo, attended by numerous and splendid retinues, bearing valuable presents, which form a main portion of the Kubo's revenues. The general executive government is confided to seven ministers; the supreme judicial council is composed of five daimios, who assist the Kubo in deciding on political offences; and a senate of fifteen daimios forms the ordinary court of civil and criminal law. The laws are severe, and even sanguinary; fines are seldom imposed; exile to the penal settlement of Fatsisio, banishment, imprisonment, torture, and death by decapitation or impaling on a cross, are the ordinary punishments; and it often happens that the courts visit with punishment, not only the delinquents themselves, but also their relatives and dependents, and even strangers who may have been spectators of the crime. In order to avert these evils from his friends, an offender sometimes anticipates his expected punishment by ripping up his belly; and every Japanese is instructed in the art of performing this operation. The prisons are gloomy and frightful dungeons; and the police is extremely strict. The public revenues are derived from taxes on land and houses; the land is assumed to be the property of the State, and the tax, as in all Asiatic governments, consists in part of the rents, which are said to exceed the half, or even two-thirds, of the produce. The army in time of peace is rated at 100,000 infantry, and 20,000 cavalry. The arms of the former are muskets, pikes, bows, sabres, and daggers; of the latter, lances, sabres, and pistols. The artillery is confined to a few brass cannon and light guns. Discipline and the art of fortification are little understood. There is no armed navy.

The industry of the Japanese will bear a comparison with that of the Hindoos or the Chinese. Their works in copper, iron, and steel, bear a high character; telescopes, thermometers, watches and clocks of good quality, are made at Nangasaki; glass is made, but the manufacturers are not acquainted with the art of glass-blowing. Printing was introduced from China in the 13th century, and is conducted in the Chinese manner by means of wooden blocks. Silk and cotton cloths are manufactured in quantities nearly sufficient for the supply of the country; and porcelain which is even more esteemed than that of China. The art of lackering is practised with great success; good paper is made from the bark of the mulberry and other trees, and the fibres are made into cordage. The art of building houses is very little advanced; they are almost universally constructed of timber, plastered on the outside, and consist of two storeys, divided into rooms by slight paper partitions. Of ship-building and navigation their knowledge is very limited; and they are compelled by law to build their vessels in a particular fashion, very like that of the Chinese junks. Great numbers of ships are employed in the coasting trade of the empire; but they are quite unfit for the navigation of the open sea. The internal trade is very extensive, and native industry is protected and encouraged by a variety of regulations, while, on the other hand, there are no customs or excise duties, and communication is facilitated by numerous coasting vessels, and by excellent roads. The shops and markets are always well provided, and the great fairs are attended by crowds of people from all quarters. Foreign commerce, however, so far from being encouraged, is rigorously opposed by the government, in consequence of the attempts made by the Jesuits to Christianize the people. Nangasaki is the only port for foreign trade, and the Dutch are the only Europeans allowed to engage in it; while the number of vessels, and the kinds and quantities of goods, are strictly defined; and the number of residents in the factory is restricted to eleven. The ships, on arrival, are minutely searched; and the crews are confined to the small island of Desima, which is close to the harbour. All the business is transacted by Japanese, who even unload and reload the vessels. The superintendent of the factory is likewise obliged to send valuable presents to the Kubo; and once in four years he is required to make an official visit to Iedo, with great pomp, and gifts of more than usual value, costing, with the journey, about £3000. The imports comprise raw silk, woollen, cotton, and linen cloths, sugar, dyewoods, seal-skins, pepper and other spices, mercury, tin, iron, cinnabar, glassware, &c., from the Dutch; and silk, tea, sugar, dried fish, and whale oil, from the Chinese. The exports consist chiefly of copper in bars, and, to a small amount, of camphor, silk fabrics, lackered ware, porcelain, &c.

Miyako (i. e. the capital) or *Kio* (the residence) the metropolis of the empire, is a very large city situate in a plain surrounded by hills, in the south-western part of Niphon, about 40 miles from the sea. It is regularly built, with straight streets crossing each other at right angles; but here, as everywhere else, the houses are only of timber and plaster, and two storeys high. Among the great number of public buildings the principal is the palace of the Mikado, an inclosure of vast extent, surrounded with walls and ditches, and overlooked by a fine square tower. Next to it are the palace of the Kubo, a building of hewn stone, surrounded by a wet ditch, and also overlooked by a tower; the temple of Fokozi, celebrated for a colossal image of Daibouts or the Great Buddha; and the temple

of Kwannon, also with a large image of that god, and numerous lamps of the extraordinary shape, Miyako is the centre of Japanese trade and industry; and contains the chief shops of the empire in consequence. Most of the books are also printed in this city, whence they derive (imperial court). Hence a cost of carrying for the subscribers of Hiogo, Osaka, and the three ports; the city also possesses a library of about 100,000 volumes, and one of the six universities of the empire. At the end of the seventeenth century, as supposed by Kempfer, Miyako contained about half a million of inhabitants, among whom were 30,000 priests.

Jedo or Yedo, the residence of the Kubo, and the seat of the chief and military government of the empire, is situated on a large plain, opening to the shore of a deep gulf, on the south-eastern coast of Niphon, about 200 miles E.N.E. of Miyako. It is about 20 miles in circumference, contains about 1,500,000 inhabitants, and carries on a great trade. The principal building is the palace of the Emperor or Kubo, situate near the middle of the city, and consisting of the castle of Siro, and the castle of Nisi-no-maru. It is surrounded with ramparts and wet ditches, which are crossed by drawn bridges. It contains the great imperial library of about 100,000 volumes; and it was here that the Encyclopædia of Japan was published, a very valuable work, in 47 volumes, with a great number of plates. Owing to the nature of its construction, the city is very subject to fires; recently a day passed without several; and whole quarters of the city are sometimes burned down.

Kioto, the ancient residence of the emperors, and, consequently, much venerated, is situate near Miyako, and is a very flourishing place, in consequence of the great number of the temples, which attract crowds of devotees. Osaka, at the mouth of the river Yodo, which runs through the plain of Miyako, is a large city, the richest and most commercial in the empire, and the great resort of all the vessels of pleasure. According to the Japanese no population might furnish an army of 60,000 men; but M. Balbi, with more than his usual moderation, thinks the total number of inhabitants may be reckoned at 200,000. Nangasaki, on the west coast of the island of Kiu-siu, an open town with two more winding streets, is the only place where foreigners are allowed to trade. The commerce and manufactures render it very flourishing and populous; and it is commanded by hills crowned with numerous temples, which render the view very picturesque. Simbasi, a large town, with 20,000 inhabitants, stands on a bay at the south-west point of the island of Iezo. Its harbours is commodiously filled with merchant vessels, and it has a flourishing trade. Among the remarkable places of Japan we must not omit the island of Kosima, the most extraordinary place of exile in the world. It is a small island in the open sea, 300 miles S. by E. of Yedo, and its coasts are so precipitous that there is only one landing place. The prisoners, who have fallen under the Kubo's displeasure, are sent hither, where they are employed in different kinds of handiwork, and manufacture stuffs so precious for their beauty, that his majesty reserves them for his own use.

The large island of Iezo, called also Ma-ma, and Ae-no, to the northward of Niphon, and separated from it by the Strait of Sangar, though possessed and colonised by the Japanese, is also inhabited by an aboriginal people, who call themselves Ainos, but are called by the Japanese Ma-mo (hairy bodies). They are distinguished from the Japanese by a somewhat taller stature and more robust frame; have very large, thick, black beards, and black and somewhat frizzled hair. They live chiefly by hunting and fishing, and pay their tribute to the governor of Matmai, in skins or other natural productions of their country. Their principal arms are bows and arrows. They live without cultivated land, and almost without religion; have no alphabet, and no code, and trade entirely by barter. They live in tribes, which are just so many family associations, though they sometimes form mutual alliances. Their language seems to be entirely foreign to the Japanese, the Mantchoos, and the Kamtschadals. The island presents on all sides lofty mountains, covered with beautiful verdure and magnificent forests, which abound with wild animals.—(Malte Brun, II. 303, 314.)

AFRICA.

GENERAL DESCRIPTION.

PHYSICAL GEOGRAPHY.

ASTRONOMICAL POSITION. — Between 37° 20′ N. and 34° 50′ S. latitude; and 51° 30′ E. and 17° 33′ W. longitude.

DIMENSIONS. — The greatest length from N. to S. is about 4988 miles; and the greatest breadth, from E. to W. about 4618. The superficial area is estimated at 11,870,000 square English miles.

BOUNDARIES. — *Northern:* — The Atlantic Ocean, the Strait of Gibraltar, and the Mediterranean Sea. *Eastern:* — The Isthmus of Suez, the Red Sea, and the Indian Ocean. *Southern:* — The Southern or Antarctic Ocean. *Western:* — The Atlantic Ocean. Africa is a vast peninsula, joined to Asia by the Isthmus of Suez, which is only about 75 miles broad; and, at the Strait of Bab-el-Mandeb, the southern extremity of the Red Sea, it approaches within 16 miles of the same continent. It is separated from Europe by the Mediterranean Sea, and the Strait of Gibraltar, at the latter of which the two continents approach within about 10 miles of each other.

NAME. — The meaning of the name of this great continent has been a fertile subject of conjecture among philologists and antiquaries. By the Greeks it was called *Libya*, and by the Romans, *Africa;* the learned Varro believed that he had found the etymology of the former in *Libs*, the Greek name of the south wind; and Servius, the scholiast on Virgil, proposes to derive the other from the Latin *aprica* (sunny), or the Greek *a-phriké* (without cold). It is more probable that the name Libya was formed by the Greeks from the name of the people whom they found in possession of the country west of Egypt, and who are called in the Hebrew Scriptures *Lehabim* or *Lubim*. With respect to *Africa*, Suidas tells us that it was the proper name of that great city which the Romans called *Carthago*, and the Greeks *Karchedon*. It is certain at least that it was applied originally to the country immediately around Carthage, that part of Africa with which the Romans became first acquainted, and was subsequently extended with their increasing knowledge, till it came at last to include the whole continent. Of the meaning of the name the language of Carthage itself supplies a simple and natural explanation; the word *Afryqah* signifies a separate establishment, or in other words a colony, as Carthage was, of Tyre. The Arabs of the present day give the name of *Afrikiyah* or *Afryqah*, to the countries which formerly depended on this original Afryqah; and it may be remarked, that the name was not used by the Romans till after the time of the first Punic war. (*Esquisse Generale de l'Afrique, par M. D'Avezac.* Paris, 1837; pp. 5, 6, 7.)

GENERAL ASPECT. — Unlike the other great continents, Africa presents a solid mass of land with a very regular coast, unbroken by large peninsulas, islands, bays or gulfs, except only on the south-western side, where the Gulf of Guinea makes a deep and wide indentation. The length of its coast-line is calculated to exceed 16,000 miles. Throughout the whole of that space there are only two navigable openings yet known by which access can be obtained to any considerable distance into the interior of the continent; and though the one of these, the river Nile, has been known to the civilized world since the earliest dawn of history, its remote sources have not yet been reached by Europeans; while the mouth of the other, the Kawara, is a discovery of very recent date; the certainty of its existence, and the direction of its course, were proved so lately as the time of Mungo Park. In addition to this want of water communication, the access of travellers has been barred by the all but insuperable difficulties of passing the deserts, which occupy so large a portion of its surface, and serve as a wall of separation between its sable natives and their lighter

coloured brethren of the northern and eastern continents. The general characteristic of the surface is, that in most parts of its outline, the countries immediately on the coast are low plains, above which the land rises by successive terraces, forming at their summit level an immense table-land, or a series of table-lands, which seem to occupy the greater part of the unexplored interior.

MOUNTAINS.—The north-western portion of Africa, known on the Mediterranean Sea and the Sahara, contains a range of mountains which has been known from the most remote antiquity under the general name of ATLAS. The principal chain begins on the shores of the Atlantic Ocean, with Cape Geer, in 30° N. lat., and proceeds almost directly from the sea to a great height, and extends nearly due east to the meridian of Mequinez, when it turns to the east-north-east, and continues in that direction to the meridian of Algiers, where the ridges unite in an extensive nucleus which contains the highest summits of the chain. From this point a chain appears to extend along the western side of the basin of the river Mulwah nearly to its mouth in lat. 35° N., while another branch, under the name of *Jebel Tedla*, proceeds in a north-easterly direction along the eastern side of the river basin of lat. 34°, and then stretches in an easterly direction through the territory of Algiers, where the highest part bears the name of *Wantersa*. Various ridges, and terminating at the river Shellif, which probably interrupts the continuity of the chain. Little to the west of the meridian of London. To the east of that river, the range of mountains, south-east of Algiers, the *Jebel Gerrerah*, lat. 36° 20′ N., from which it declines to the south-east. Farther east several ridges appear to extend in different directions into the territory of Tunis, terminating on the one side in Cape Blanco and Bon, and on the other at the basin of the Lake of Marks, and the Gulf of Khabz. The chain or range whose general course we have thus endeavoured to trace, has been sometimes distinguished by the *Lesser Atlas*, in consequence of its being supposed that a higher chain ran behind, and the country farther inland, between Barbary and the Great Desert. It has now been ascertained that no such chain exists, the country between the coast chain and the desert being occupied by the natives as more or less elevated table-land, with slopes of greater or smaller rapidity, but without any range of mountains. From *Jebel Tenan*, west of the Mulwah, a minor chain extends westward, nearly parallel to the coast of the Mediterranean, and terminates with *Jebel Zaarat* or *Apes's Hill* at the Straits of Gibraltar. From the southern part of the great mountains another minor chain, named *Jebel Hadrar*, extends first south, and then westward towards the shores of the Atlantic, near Cape Nun; while spurs diverge on both sides, forming the watersheds of the various wadies or river valleys, that pour their waters towards the sea or the desert. To the east of Lake Loudeah, a chain of hills, lower than the Atlas, but which may be considered as a continuation of the same system, extends in a direction nearly parallel to the shores of the Mediterranean, under the names of *Jebel Fissel*, *Jebel Gharian*, and the mountains of *Larhouath*, terminating in a chain of low hills which skirt the coasts of the greater Syrtis. The only summit of the Atlas which has been measured with any degree of accuracy is *Miltsin*, 27 miles S. 20° E. of Morocco, which has been found to be 11,400 feet above the level of the sea, a height below the limit of perpetual snow assigned by Humboldt; and yet this summit but once in twenty years has been seen free from snow. It is more than probable that Miltsin and the neighbouring summits are not the highest of the range, which will probably be found in the province of Tedla, near the sources of the two great rivers Om-er-begh and Mulwah, where a considerable part of the chain is permanently covered with snow, and where the summits have been estimated to reach the height of 13,200, and even 15,400 feet. Wantersis and Gergerah are covered with snow during a considerable part of the year, and have been estimated to reach the height of 7000 feet (1200 toises.)

Mountains of Abyssinia.—These form a chain remarkable for its elevation and extent, which proceeds in a direction from south to north, across the provinces of Shoa, Amhara, and Tigre, and is prolonged towards the south-west across the table-land of Gingiro and Narea, beyond which it is supposed to join or form a part of the celebrated *Mountains of the Moon*, of which nothing is known but the Arab name. This name is either *Qumr* or *Qemr*, according to the diacritical marks employed. *Qumr* signifies an object of a white colour; *Qemr* signifies the moon. If the former be the correct form, it may imply that these mountains are covered with snow; but as the name *Mountains of the Moon* is as old as the time of Ptolemy the geographer, the latter is more probably correct.—*Journal Asiatique, Paris, December 1837.* Another chain appears to extend to the south-west from that which overtops Lake Dembea, across the Bahr-el-Azrek, and to join the mountains of *Dyre* and *Tegla*, to the south of Kordofan and Dar-Fur. Another very high chain extends through the eastern part of Haire, and, stretching in a direction from south to north, forms the famous citadel of *Taranta*. Proceeding northward, this chain follows the direction of the west coast of the Red Sea, and, on Nubia, forms the mountains of *Langap*, the height of which must be great, since, according to Burckhardt, they form the limit of the seasons in that part of Africa. The hills which form the basin of the Nile in Nubia and Egypt, and the west coast of the Red Sea, may be considered as an extension of the Abyssinian mountains, but are too inconsiderable to require further attention here.

The *Mountains of Kong*. This name has been given to a range which separates the low country of Guinea from the basin of the Kawara, and has been supposed to extend eastward across the continent, to join the Mountains of the Moon. It appears to terminate westward in a very hilly country, which contains the sources of the Kawara, the Senegal, and the Gambia; in long. 10° 30′ W. it is crossed through by the stream and valley of the Kawara, but beyond that eastward their name, the *Mountains of Mandara* with others in the interior, and *Cameroons*, on the sea coast, which appear to be connected with the Kong. The Cameroon mountains rise to an elevation of 13,000 feet, close to the sea, and in the adjoining island of Fernando Po, Clarence Peak rises to 10,655 feet. These mountains appear to be of volcanic formation, and to be connected with those of Mandara by a chain of the same description. But beyond these scanty particulars, hardly nothing is known about this range or system of mountains.

In southern Africa the *Mountains of Lupata* or the *Back Bone of the World*, have been long celebrated. They are supposed to extend in a line parallel to the south-east coast, from Cape Guardafui to the Cape of Good Hope, or nearly so; but nothing positive is known respecting them. The same may be said of the corresponding chain which extends along the eastern regions of Congo Angola, and Benguela, supporting the western side of the great table-land which is supposed to occupy the interior. But the mountains which occupy the extremity of the great peninsula are somewhat better known; as they form several chains of great height within the territory of the Cape of Good Hope. Of these the *Nieuwveldt* rises to 10,000 feet; the *Compassberg*, in the snowy range, to 7400; and the *Table Mountain*, near the Cape, to 3582 feet above the level of the sea.

PLAINS and DESERTS.—Of the smaller plains and alluvial river-basins and deltas common to Africa with every other continent, there are none so extensive as to require particular notice in this place. But in its grand characteristic of *deserts*, Africa is pre-eminent. The great desert, to which the Arabs give the name of *La Sahara* or *Sah'ra* (the Desert), by way of eminence, occupies a space of more than 46° of longitude and 15° of latitude, or about 3000 miles in length, and 1000 in breadth, the tropic of Cancer running through the middle of its breadth. A great part of the surface is a dead level, stretching on every side like the ocean, and presenting a view only limited by the horizon. In some

places it is a naked burning plain of sand; other parts consist of hard clay; and in some places the surface is covered with small sharp stones. Elsewhere it is diversified with ravines, rocks, and eminences, all alike barren and unfruitful; while the soft finely pulverised sand is driven to and fro by every breath of wind, and piled up into hillocks which constantly change their forms and places, and too often bury whole caravans in their bosoms. This vast tract, however, is not entirely desert. It is sprinkled here and there with fertile spots, like islands in the sea, which render its dreariness only the more awful from the contrast. In these spots, called *oases* or *wahs*, the supply of water admits of a certain degree of verdure and cultivation, affording support to a scanty population. In the eastern part of the desert some of these oases are of considerable extent, and form a sort of little kingdom. In other parts they are only large enough to contain one or two villages, which serve as halting-places for the caravans; others of them afford merely springs or wells for the refreshment of travellers, but too small a portion of cultivable soil to admit of settled habitation. The Sahara contains, likewise, many salt lakes, which afford an abundant supply of natron and common salt, important articles of traffic between the desert tribes and the people of Soudan, where salt is wanting. But under the impulse of the predominating thirst for gain, man has overleapt the barriers which nature might seem to have destined to remain for ever insurmountable, had she not provided an instrument every way calculated to carry her favoured children over these her dreariest regions. The camel has been emphatically called the ship of the desert, and, by the assistance of this invaluable animal, the recesses of the Sahara have been explored, and regular tracts for commerce established across its wastes. Caravans, or companies of traders cross the desert in every direction, amounting sometimes to the number of 2000 individuals. They are generally men inured from their infancy to the hardships and difficulties of these formidable journies; their food consists of camel's milk, with barley meal or Indian corn, and a few dates. Water is conveyed in goat-skins, covered with tar, and these are replenished at the wells which occur in the route. Sometimes, however, in dry seasons, the springs fail, and great numbers of the travellers and their camels perish from thirst; only about thirty years ago, a caravan proceeding from Tafilelt to Timbuctoo, across the western part of the Sahara, wholly perished, to the number of about 2000 men and 1800 camels. Difficult, dangerous, and disagreeable as the journey is to the regular traders, it may well be imagined how much more so it must be to the poor negroes whom they bring with them in large numbers from Soudan, to supply the slave markets of Barbary and Turkey. Quite unaccustomed to such travelling, and too often ill supplied with food and water, these poor wretches speedily fall victims to the avarice of their masters. When wearied out they lie down and die, and the desert paths are strewed with their bones. Denham and Clapperton, in one part of their journey to Bornou, passed from sixty to ninety human skeletons every day; but at a place called El Hammam, the numbers were countless; and the greater part of these, our travellers were told, were the spoils brought by the sultan of Fezzan from Soudan, only the year before.

The *Desert of Angad* occupies the western part of the territory of Algiers; other deserts of great extent appear to occupy Ajan and the country of the Cimbebas on the south-east; another large desert extends from the southern borders of Benguela to the river Gariep; and to the south of that river, elevated districts called *Karoo*, of several hundred miles in extent, occur between the high mountain ranges which constitute the Cape territory.

RIVERS and LAKES.—Almost the only rivers worthy of notice in a general description of the continent are, the *Nile*; the *Senegal*; the *Gambia*; the *Kawara*, *Quorra*, *Joliba*, or *Niger*; the *Zaire* or *river of Congo*; the *Gariep*; and the *Zambezé* or *Zambizi*.

The *Tchad*, *Tjad*, *Schad*, or *Chad* is the largest lake yet discovered in Africa. Its centre lies in 15° E. long., and 13° 30′ N. lat.; its length being about 200 miles, and its breadth 150. Its water is fresh, and it is said to have no outlet. The other principal lakes are:—*Fittre*, a large lake east of the Tchad, of which nothing is known; *Dibbie*, *Debo*, or *Djebou*, formed by the Joliba, between 15° and 16° N. lat.; the *Dembea* or *Tzana*, formed by the Bahr-el Azrek, in Abyssinia; the *Birket-el-Keroun*, formed by the Nile in Egypt; the salt lakes or marshes of *Melgig*, *Shott*, and *Loudeah*, in Barbary; and *Maraci*, a large lake said to exist in the interior, north-west of Mozambique; but of which nothing whatever is known.

ISLANDS.—*Madagascar*, *Comoro Islands*, *Bourbon*, *Mauritius*, *Amirante isles*, *Seychelles*, *Zanzibar*, *Pemba*, *Mozambique*, *Querimba*, and others off the south-east coast; *Socotra*, east of Cape Guardafui; *Madeira*, *Desertas*, and *Porto Santo*; *Canary Islands*, and *Cape Verde Islands*, off the north-west coast; *Fernando Po*, *Principe*, *San Thomé* and *Annobon*, in the Gulf of Guinea; *St. Helena*, *Ascension*, and *Tristan da Cunha*, in the Atlantic Ocean; *Jerbah*, and *Karkineh*, off the coast of Tunis, in the Mediterranean; *Dhalak* and others in the Red Sea.

CAPES.—*Bon* and *Blanco*, on the north-east coast of Tunis; *Ceuta* and *Spartel*, at the Strait of Gibraltar; *Blanco*, *Cantin*, *Geer*, *Nun*, in Marocco; *Bojador*, *Das Barbas*, *Branco*, on the coast of the Sahara; *Cape Verde*, the most westerly point of the continent; *St. Mary*, at the mouth of the Gambia; *Mount Palmas*, *Three Points*, *St. Paul's*, on the coast of Guinea; *Formosa*, the south-west point of the delta of the Kawara; *Lopez-Gonsalvo*, *St. Catherine*, in Lower Guinea; *Padron*, at the mouth of the Zaire; *Negro*, in lat. 16° south. *Voltas*, at the mouth of the river Gariep; *Good Hope* or THE CAPE, the south-west point of Africa; *L'Agulhas*, the most southerly point of the continent east of the Cape; *Corrientes*, *St. Sebastian*, *Santa Maria*, *Delgado*, *Orfui* or *Hejaun*, on the south-east coast; *Guardafui* or *Ras Assere*, the most easterly point of the continent, at the entrance of the Gulf of Aden.

CLIMATE.—With the exception of the Barbary States, Egypt, a part of the Sahara, the country of the Hottentots, and Caffraria, this vast continent lies between the tropics, and its climate, generally speaking, is that of the torrid zone. It may even be said that the influence of this tropical climate is felt over a great part even of those countries which their northern situation should exempt from it, for it is really only that strip of Barbary which the Atlas protects from the hot winds of the desert, and that part of Hottentot-land protected by the Nieuveldt and other mountains near the Cape, that enjoy the advantages of countries situate within the temperate zones. With the exception, therefore, of these small and narrow tracts, of those regions in the interior to which their elevation imparts the coolness of higher latitudes, and the borders of the great lakes and rivers, every part of Africa is burnt up by continual heat, and the continent generally may be regarded as the warmest part of the globe. Nothing moderates the heat and the dryness, but the annual rains, the sea-winds, and the elevation of the soil; while in the well-watered regions, the moisture, combined with the heat, though productive of the most luxuriant vegetation, are extremely unwholesome to man.

MINERALS.—The mineralogy of Africa is as imperfect as any other part of its geography. We have, nevertheless, says M. Balbi, endeavoured to arrange in the following table, the principal countries according to the respective abundance of the minerals which they produce.

Mineralogical Table of Africa.

DIAMONDS.—*Region of Moghreb*, Algiers.

OTHER PRECIOUS STONES.—*Negroland*, Angola, Bihe, Cassanga, Muchingi, Country of the Maloinas; *Egypt*, in the Arabian chain of its mountains.

GOLD.—*Negroland*, Boure, Kamalia, Mandingo, Wassaw, Dankara, Haoussa, Wangara, Bambouk, Akim, &c.; *Western Africa*, Abuta; *Region of the Nile*, Kamamil, the country along the Bahr-el-Abiad, Abyssinia, &c.

SILVER.—*Eastern Africa*, Chicova. *Negroland*, the plateau of Timbo, Baghermeh.

COPPER.—*Negroland*, Country of the Moloua, Borgo or Dar-Saleh, Dar-Fur, &c. *Eastern Africa*, Country of the Cazembes, the Movizas, the Maquainas, Butuo, Zumbo, Inhambane. *South Africa*, Country of the Hottentots. *Region of the Nile*, Fertit, Kordofan, &c. *Region of Moghreb*, Marocco, &c.

LEAD.—*Region of Moghreb*, Algiers, &c.

IRON.—*Negroland*, Bambouk, Timbo, Kalle, Dentilia, Argola, Loanzo, Benguela, Moloua, Sala, Wassoulo, Bere, Madara, Cassanna, &c. *South Africa*, Country of the Maquainas; *East Africa*, Country of the Cazembes. *Algiers, Abyssinia.*

SALT.—*Moghreb*, Marocco, Tagazza, Aroan, Bilma, &c *Region of the Nile*, Baylur, Kordofan, Sennaar, &c. *Negroland*, Quissama, Angola, Benguela, Saley or Vadai, Dar-Fur, &c.

VEGETABLE PRODUCTIONS.—Our knowledge of the botanical geography of Africa is limited in this respect, that we are acquainted with little more than its sea-coasts, while the interior is almost entirely unknown. The vegetable productions of the coasts of Barbary are closely related to those of the Spanish peninsula, from which they are separated only by the narrow interval of the Strait of Gibraltar, so that there is a singular analogy between the flora of Algiers and that of Andalusia and Valencia, in Spain. Olives, oranges, *chamærops humilis*, the arborescent *ricinus*, and the date-tree grow in both countries equally well. A somewhat higher degree of heat in this part of Africa favours the development of several vegetable forms unknown to the south of Europe, but they are, nevertheless, only different in species, without being so distinct as to constitute new *genera*. The plants of Barca have likewise a great similarity to those of Europe; they form the transition between the Atlantic species and those of Egypt; and even some of them are of a kind which seems peculiar to the torrid zone. The *zizyphus lotus* or jujub, is so abundant in this country that some ancient tribes were fed exclusively with its fruit, and received, on that account, from the Greeks, the name of *Lotophagi* or Lotus-eaters. Egypt presents a great number of particular plants, which are so characteristic, that the mere sight of them, meagre and stunted as they are, is sufficient to indicate their country. Upper Egypt produces in abundance numerous kinds of *cassia*, the leaves of some of which form, under the name of *senna*, a considerable branch of commerce. Besides the date-tree and the chamærops there is also a remarkable kind of palm called the doum palm or *cucifera thebaica*. Several aquatic plants cover the surface of the Nile with their large leaves, and their flowers, which float gracefully upon the water; as the *nymphæa lotus* and *cærulea*, which are seen on the ancient monuments; but the *nelumbium speciosum*, which is also figured among the hieroglyphics, has disappeared from the waters of the river The fruit described by the ancients under the name of *perea* is produced by a plant supposed to be the *balanites Egyptiaca*, a small thorny tree which covers the sandy tracks not only of Egypt, but also of a great part of central Africa, and is found in abundance at Senegal. In Abyssinia, the vegetation has not yet acquired a tropical character; it is, nevertheless, connected with the plants of Mozambique and the Cape of Good Hope. In this country Bruce found a species of *protea*, and Salt, a *pelargonium*, genera which were believed to be peculiar to the Cape of Good Hope and New Holland. Coffee grows naturally on the African coast of the Red Sea, near Bab-el Mandeb, and in the interior, to the southward of Abyssinia, and from it the province of *Kaphа* takes its name. The plants of Upper Egypt, on the contrary, and of the country farther inland, have a great resemblance to those of the west coast of Africa; but no country offers in its plants such a singular physiognomy as the Cape of Good Hope. It is there that we find numerous *ericæ*, *proteæ*, *pelargonia*, *mesembrynthema*, *ixiæ*, *stapeliæ*, &c. These genera are formed by a number of species all collected together near the south point of the continent, with the exception of one or two which are found upon the more northern coasts The plants of the equinoxial regions have a strong resemblance to those of the west coasts; so much so that there is a great uniformity of vegetation from the Senegal to the Zaire. Among the trees are found the *adansonia digitata* or baobob, that colossus of the vegetable kingdom, which grows also in Nubia, the *bombax pentandrum*, the *elais guineensis*, and others. These remarkable plants are found along a very considerable extent of the coast. The *sterculia acuminata*, a tree whose seeds, known among the natives by the name of *cola*, have, it is said, the property of rendering the most unwholesome water drinkable, grows in Guinea and at Sierra-Leone. The *anona senegalensis* and the *chrysobalanus icaco* are also useful trees found on the banks of the rivers from the Senegal to the Zaire In Senegambia, indeed, there are plants not only of species which grow in the regions of Africa of analogous climate, such as upper Egypt, and in Arabia, &c., but also of species which have been considered peculiar to the Indian Archipelago, Madagascar, and South America It must, however, be remarked that these vegetable relations are only found in regions characterised by excessive heat accompanied by humidity, as the banks of the Gambia and the Casamanca. With respect to the sandy and arid localities of Senegal properly so called, they furnish vegetable productions which resemble those of Egypt and Arabia. The alimentary plants cultivated by the natives of the west coasts are maize, cassava, two kinds of pulse, of which the one is the *cytisus cajan*, L., the other a kind of haricot (*dolichos*) and the *arachis hypogea*. The best fruit trees of the same country are the banana (*musa sapientum*), the papaw (*carica papaya*), lemons, oranges, tamarinds, the *elais guineensis* which furnishes the palm-oil, and the *raphia vinifera*, which, as well as the *elais* and a species of *corypha*, produces the famous palm-wine. Some botanists think that the greater part of these plants are of an origin foreign to Africa. Thus Mr. Robert Brown assigns an American origin to the maize, the cassava, the ananas, the papaw, and tobacco, while he thinks that the banana, the lemon, the orange, the tamarind, and the sugar-cane have been imported from Asia. The interior of equinoxial Africa is unknown to botanists; but if we compare the productions of Senegal, Benin, Congo, and Upper Egypt we find among them such striking relations, as early to prove, in our opinion, that the same climatoric causes originate the same vegetable productions, without perceiving any necessity for supposing their transmigration from one country to another.—(*Balbi's Abregé.*)

ANIMALS.—With the exception only of a few animals common to Africa with the adjacent peninsula of Arabia, this continent presents a zoological physiognomy as distinct from that of Asia as if the countries were separated by the distance of half the globe. In the whole of central and northern Africa are found lions, panthers, ostriches, jackals, gazelles, and antelopes, of kinds that are not found to the south of the tropic of Capricorn, where so many other species are assembled. Everywhere the antelopes are the prey of the lions and other feline animals, and of the jackals, hyænas, and pythons. The one-humped or Arabian camel, now abundant in northern Africa, was introduced to the west of the Nile only since the third century. Beyond the Sahara, under the influence of the humidity produced by the great rivers of Senegambia and Soudan, appears a creation, of which no species have ever crossed the desert. There we find the African elephant, the two horned rhinoceros, the tall giraffe, and the clumsy hippopotamus, which extend their ravages, or have their haunts, in every suitable locality between the Sahara and the Cape of Good Hope. Between the tropics are found various species of the dog-headed monkeys (*cynocephali*), none of which ever inhabited Egypt, but of which, nevertheless, three kinds were worshipped in that country, a practice which could only have originated in the native region of these animals. Monkeys with painted faces are found only in Guinea; some are found

at the southern extremity of the continent; and others again from Sennaar to Cafferland. In the basins of the upper Nile and its affluents are two kinds of the *fennec*, described and delineated by Bruce, which has been thought to be a *galago*. Its immense ears, exceeding two-thirds of the length of its dog-like body, form a wide distinction between it and the other *quadrumana*. Figured on the monuments of Lower Egypt, with the dog-heads, the sacred beetle, and the antelopes of the same region, the fennec establishes the Ethiopic origin of the people who raised those monuments. Along the coasts of Zanzibar the Cape buffalo lives in the same forests with the elephant; to the south of the tropic of Capricorn are found the numerous species of antelope, which seem to have been assembled at the southern extremity of the continent as a compensation for the want of even a single species of deer. There also are found the zebra and the quagga; the engallo or phacochere, with the body of a boar, the grinders of an elephant, and whose face, bristling with four protuberances, has given it its name of the masked boar; and the Ethiopic wild boar, figures of which are seen in the mosaics of Palestrina, which has two pairs of ribs more than the European boar, and to which the ancients gave the name of *hoyropotamus*. Among the reptiles are crocodiles, succhos, khamses, monitors, tupinambis, and chamæleons; which last three animals are found nowhere else but in Spain and the Moluccas. The birds peculiar to Africa along the confines of Europe and Asia, have a strong analogy with those of the other two continents. The region of the Nile and the shores of the Mediterranean contain species analogous to those of Arabia, Persia, and Spain. In the sandy deserts of Central Africa are species fitted for these solitudes; while the southern extremity contains birds which are new and peculiar. The ostrich is found in the equatorial zone and the deserts; the messenger or secretary, a singular bird of prey that feeds upon reptiles, is found near the Cape; few regions, indeed, are more prolific of rapacious birds than Africa, and the animals that serve for their prey are abundant and easily procured. Large carrion vultures, griffons, the hideous chincow, and the oricow are always on the watch for the fall of some animal, upon whose carcase they pounce, and devour it in an instant: and in this work they are joined by a smaller species, the percnopters. Eagles are found in every region of Africa, along the banks of its lakes and rivers, and its sea-coasts. The other rapacious birds are kites, sparrow-hawks, vultures, bats, buzzards, and falcons. Crows are abundant; Guinea fowl, bustards of enormous size, grouse, partridges, and quails are much more so. The Numidian, the virgin, the Balearic cranes, the rose-coloured flamingo, the pelican, and a great variety of water-fowl, frequent the lakes and rivers of every part of Africa except the desert. In the equinoctial regions are parrots and parroquets innumerable, and birds of the most beautiful plumage.

Noxious insects and reptiles of almost every species abound; scorpions, scolopendras, enormous spiders, and other venomous creatures; but the Africans suffer less from these than from two other enemies, which, though individually powerless, are, when collected in swarms, the greatest scourge which can be inflicted on a country. These are the *termites* or white ants, and the locusts. The ants abound in all the tropical regions, and even for some distance beyond them; they build clay houses of enormous size, some of which Clapperton met with in his last journey, rising to the height of twelve feet, and resembling so many Gothic cathedrals in miniature. These ants devour every sort of animal or vegetable substance that falls in their way; and they march together in incredible swarms, making up by their numbers for their individual insignificance. Locusts are still more destructive; they are gregarious like the ants, and the region over which they have passed has the appearance of being clean swept. When on the wing they form so dense a body as to hide the sun like a black cloud.

PEOPLE. — There is a greater variety in the physical characteristics of the native Africans than is found among the inhabitants of any of the other continents. As the interior regions are almost entirely unknown, it is impossible to say what varieties may be found there; but along the maritime countries, throughout the Sahara, and the greater part of the basins of the Kawara, the Tchad, and the Nile, the varieties already known are so numerous and so perfectly distinct, that it is not easy to say what characteristics they have in common, except those that distinguish man from the animal creation. The central or equinoctial regions, extending along both Oceans, from the southern limits of the Sahara and Abyssinia to about the 16° or 20° S. lat., are possessed by numerous races and varieties of the black-coloured, woolly-headed people, which are classed by naturalists as the Ethiopic or Black race, or Negroes properly so called. According to M. Flourens, they are an essentially distinct race from the whites. They have under their skin a particular apparatus, which is entirely wanting in the white man, and which is the seat of the pigment or colouring matter. — (*Annales des Sciences Nat. December* 1838. *Edin. New Phil. Jour.* XXVII. 353.) The Sahara and Moghreb are possessed by people of many varieties, all referable to the Caucasian or white class; differing in complexion according to the climate or other physical circumstances, but having nothing in common with the proper Negroes, except their colour, which in some of them is almost or even quite black in those parts of the body which are exposed. Among these the most remarkable are the *Berebers* or *Amazighs*, who possess the Atlas mountains, and are supposed to be the remains of the aboriginal natives of that region; the *Shellukhs*, *Tibbous*, and *Tuaricks*, the principal tribes of the desert, who are likewise, probably, of the same lineage. The uncultivated low country of Moghreb is occupied by numerous tribes of *Arabs*, while the cultivated districts and the towns, along with a narrow strip of country on the southern skirts of the Sahara, between the desert and the Kawara, are possessed by the *Moors*, a swarthy race, apparently sprung from an intermixture of the aborigines with Phenician, Roman, Gothic, Vandalic, Arabic, and Turkish blood. Turks of pure lineage are found in Barbary, and also a great many Jews. In the region of the Nile there are likewise many varieties, chiefly Caucasian, though some are apparently Ethiopic. The great body of the inhabitants of Egypt are of Arabic origin, while their rulers are Turks; the deserts on both sides of the Nile are possessed by roving Arabs; and the ancient Egyptians are represented by a few thousand scattered *Copts*. The Abyssinians, or at least the lately dominant race in that country, are apparently the remains of a colony from the eastern shores of the Red Sea; but they are now pressed upon and hemmed in by African races of unknown origin and lineage. Nubia is occupied by several very mixed races, Negro as well as Caucasian, and varieties of the latter are found along the coasts of the Red Sea, and the Gulf of Aden, as far at least as Cape Guardafui. We find in South Africa, beyond the country of the proper Negroes, two distinct races at least, the Caffers and the Hottentots, who cannot very well be referred to either the Caucasian or the Ethiopic class. The Caffers are a tall, well-proportioned, handsome people, nearly approaching Caucasians in figure, features, and expression, but they have thick lips, and curly though not woolly hair, and their complexion is a blackish grey, or, in some cases, even jet black. The Hottentots, on the contrary, are rather an ugly race; their hair is black, sometimes brownish, very short and woolly; but their skin is dark brown or yellow, and not black. They are the original possessors of the country which extends east and north of the Cape of Good Hope; having for their eastern neighbours the Caffers, varieties of whom extend along the coast from about Algoa Bay to Soffala, but how far inland to the north-east is unknown. Of the languages of these various races very little is known; M. Balbi has, nevertheless, contrived to arrange them all into great ethnographical divisions, and has presented us with the following

Table of the Classification of the People of Africa according to their Languages.

The REGION OF THE NILE contains the following Families or Stocks:—

The EGYPTIAN FAMILY: the *Copts*, who are the descendants of the ancient Egyptians. After the introduction of Islam, their language was gradually replaced by the Arabic, and became entirely

extinct towards the middle of the seventeenth century. With respect to language, the Copts should be regarded as Arabs, and as a branch of the Semitic family. It appears, nevertheless, that in the mountains of Mathmatha, near the Gulf of Khabs, and in a district of Soudan, dialects of their language are still spoken.

The NUBIAN FAMILY: the *Nobah* and the *Kenous* in Nubia. Several thousand Kenous are found in the principal towns of Egypt, where they are improperly called *Barbarins*, *Berberins*, or *Barabra*. It is to the natives of this family that are seen on the monuments as those of the ancient Egyptians.

The TIBBOU-DAZA FAMILY: the *Bouleemas*, the *Haddemas*, the *Hammamas*, the *Amarar*, &c; the *Adas*, one of whom the *Bel Fara* appear to be the least civilized, but, at the same time, the most powerful tribe; the *Zaghawa*, who have mixed and united with the Bedouin Arabs. This family occupies that part of Nubia which lies east of the Nile.

The SHIHO-DANKALI FAMILY: the *Shiho*, properly so called, who are found near the pass of Assaleh; the *Hazorta* near the pass of Taranta; the *Ismaleil*, a nomadic race on the coast from Bab el-Mandeb to Aden, the most powerful tribe of which are the *Dumhoeta*; the *Adaal* possess the country between Babel-Mandeb and Zeyla.

The SHILLOOKS, known also by the names of *Nuehs* or *Fenge*, live along the Bahr el-Abiad and in Sennaar, of which they were the dominant people till the recent conquest by the Egyptians.

The TCHERET-AMOW, occupy the centre of Abyssinia.

The FURIANS, who form the mass of the people of Dar-Fur.

The division of MOGHREB presents but a single family, to which belong all those of its inhabitants who can be regarded as aboriginal: it is

The ATLANTIC FAMILY: the *Amazirgh*, called improperly *Berbers* or *Berebers*, and also *Shelloks*, *Kabyles*, &c; who occupy the high valleys of the Atlas, and a portion of the plains in Marocco, Algeria, and Tunis, and are divided into many tribes, some of which are quite independent: the *Tuaricks*, a numerous and warlike people, spread over the middle part of the Sahara; the *Tibbous*, who possess nearly the whole of the eastern Sahara, the principal *Saoch* and *Augela*; the *Sheilahs*, in the southern part of Marocco, where most of them live under the rule of independent chiefs.

SOUDAN or NEGROLAND presents the following families:—

The VOLOFS or IOLOFS, who are represented as the finest and the blackest of all the negroes: they possess the kingdoms of Bourit-Iolof, Cayor, and Baob, and form the majority of the people of Bondou, Lower Yani, and Salum.

The MANDINGO FAMILY: the *Mandingues*, a powerful, somewhat polished, and industrious genuine negro race, in whose hands is found almost all the ivory and gold trade. Their original country is the elevated territory of Manding, but they are now widely diffused over all the region between the rivers Gambia and Gouba on the west coast, and possess the kingdoms of Bambouk, Kasson, Kaarta, Barra, Kolar, Badibou, Upper Yani, Woodi, Dondila, and Kaboo. They are also the most numerous, and were the predominant people of Bambara before the division of that kingdom. They possess likewise Kankan, Sambatamilla, Thiae, and other districts. To this family also belong the *Soninkes* or *Sarakoles*, who occupy the coast between the Rio Nunez and the Kissi, and other parts of this region.

The FOULAHS or FELLATAHS, called also *Foulahs*, *Fellans*, *Poules*, &c., a very numerous and powerful people, who possess Fouta-Toro, Bondou, Fouladou, Brouko, Wasselah, Sangara, and other countries, besides the large empire of the Fellano or Fellatahs in central Soudan. They have not the extreme negro character; they want the deep jet hue, the flat nose, and the thick lips: their features, on the contrary, are high, with an olive tint, and an agreeable expression; they are probably sprung from the intermixture of the African family with the proper negroes.

The JALONKES, who form a considerable part of the population of Fouta-Jalo, Kouronia, Bale, Firia, Sangara, Soumahana, and Boure.

The KISSIENS in the kingdom of Barbessin.

The KALANNAS, the people of the kingdom of Kalanna.

The HAOUSSA FAMILY: the *Haoussa*, the principal people of Kachna, Goubeo or Ghoober, Kano, Doury, and other parts of the wide region of Haoussa, which forms the centre of the Fellatah empire.

The YARRIBAS, the dominant people of Yarriba.

The MANDARAS, who occupy the country to the west of Bornou.

The BAGHERMEH IS and the MONBAS, the dominant people of Bagharmeh and Mobba, in central Soudan.

The BORNOUAN FAMILY; the *Bornouans*, who form the principal mass of the people of Bornou, and some other districts now separated from the empire of Bornou.

The TIMMANEES, who live between the rivers Sherbro and Cape Shilling, in the neighbourhood of Sierra-Leone.

The BOULLAM, to the south-east of the Timmanees, along the coast and in the adjacent islands.

The ASHANTEE FAMILY: the *Ashantees*, the dominant people of the empire of Ashantee, and the occupants of most of their tributary or vassal kingdoms.

The DAGOOMBA FAMILY: the people of Dagoomba, vassals of the Ashantees.

The AKRAS or INKRANS, in the kingdom of the same name, tributary to the Ashantees.

The KERRAPEES, a numerous people, divided into several petty states, almost all tributary to the Ashantees.

The ARDRAH FAMILY: the *Dahomeys*, the dominant people in the kingdom of Dahomey; the *Judahs*, tributaries of Dahomey, the *Ardrahs*, tributaries to Yarriba; the *Benins*, the dominant people in the great kingdom of Benin.

The KAYLI FAMILY: the *Kaylis* and the *Gengoumas*, in the kingdoms of Kayli and Gungounne, inland from the coast of Gabon.

The CONGO FAMILY: the people of *Congo*, *Sonho*, *Cacongo*, *Loango*, *Matyacka*, *Ondo*, &c., who speak different dialects of the same tongue; the people of *Ilo*, *Concabella*, and *Siti*, whose language is a mixture of Abounda and Congo. The *Mokocs*; the people of *Mocoangoma*, *Muchingi*, *Homa*, *Cassanga*, *Cutta*, *Ginga*, *Haboho*, *Balundo*, *Bihe*, and Portugues, Angola, all speak dialects of the Abounda language.

The BENGUELA FAMILY: the people of *Benguela*, subjects of Portugal; the people of *Quissama*, *Libolo*, *Quiqa*, *Nano*, *Hanha*, *Mongoyaguba*, &c.

SOUTH AFRICA contains the following families: —

The CAFFER or KAUFIR FAMILY: the *Kousas*, the *Tambookies* and the *Mambookies*, on the coast, the *Betchuanas*, subdivided into *Briquas*, *Tammahas*, *Farrabonas*, *Maquanas*, *Mowlongs*, and *Gokas*, inland.

The HOTTENTOT FAMILY: the *Koranna*, the *Gonaquas*, the *Namaquas*, the *Damaras*, and others, who are the Hottentots properly so called; the *Saabs*, commonly called *Bosjesmans* or *Bushmen*, the least civilized of all the known tribes of Africa. They occupy the wildest parts of the country beyond the frontiers of the Cape Colony.

EASTERN AFRICA exhibits the following families, several of which extend into Soudan and the region of the Nile:—

The MONOMATAPA FAMILY: the *Mongas*, on the lower Zambeze; the *Barwa*, on the middle Zam-

beze; the *Movizas;* the *Maravi*, who are now the most powerful people of the late empire of Monemataps. The *Macouas*, a very powerful negro race, who occupy the country to the westward of Mozambique, along the coast from the Zambeze to Melinda. The *Monjous*, one of the ugliest of the negro races, live in the interior, contiguous to the southern Macouas. The *Souahel* or *Sawaeli*, a very powerful negro race who are found along the coast from Magadoxo to opposite Mombaza.

THE GALLA FAMILY: the *Gallas*, a numerous and powerful race, celebrated for their incursions and conquests, which made them masters of a great part of the late empire of Abyssinia. They appear likewise to occupy all the country between Abyssinia and the western frontiers of the states which lie along the coast between Melinda and Magadoxo. The *Mousimbes* or *Zimbes*, a nomadic race who traverse the vast country watered by the supposed course of the river Zebee, and have acquired notoriety by the terrible incursions which they made towards the end of the sixteenth century as far as Melinda and Quiloa.

The SOMAULIS inhabit the coasts of Adel and Ajan, along the sides of the great triangle of which Cape Guardafui may be considered as the apex.

The GINGIROS, who inhabit the kingdom of Gingiro, and whom old accounts place to the south of the mountains of Abyssinia, along the banks of the Zebee.

The NINEANAI, who occupy Bomba, of whom nothing certain is known.

Besides these families, who may be regarded as the aborigines of Africa, there are several other races who have at various periods settled in different parts of the continent, and some of which have become numerous and powerful. The people of Abyssinia, who speak the Gheez or the Tigré languages, belong incontestibly to the Semitic stock; but appear to have been established in that region before the period of history. The *Arabs*, at a very early period, and, more lately, during the great conquests of the first Khalifs, invaded the region of the Nile and Moghreb, and spread even into Soudan, where they are found in great numbers. In the course of time they have introduced exclusively their language into Egypt, a great part of Nubia, along the Nile in Shendy, Damer, Sheygya, &c., in all the towns and great part of the country of Barbary, and part of the Western Sahara. They have also established themselves in several states of Soudan, as Dar-Fur, Mobba, Baghermeh, Bornou, and even within the Fellatah empire. They are also found in districts on the west coast and in the adjacent isles. The *Osmanlee* or *Ottoman Turks* have become the dominant people in Egypt, Tripoli, Tunis, and Algiers; and various European nations have also formed settlements along the coasts, and mixed with the natives. The Portuguese settlements are in Lower Guinea and along the east coast. A large territory, near the Cape of Good Hope, is occupied by Dutch and British settlers. The English, Danes, and Anglo-Americans have settlements at various points on the coasts of Guinea; the Spaniards possess Ceuta; and the French have conquered, and will probably colonise the coasts of Algiers.

RELIGION.—Fetichism, or the worship of idols, is the religion of the greater part of the Africans, and is professed by almost all the negroes, and by some branches of the Atlantic family. These people, who see in the most common things which surround them objects of adoration, appear, in general, to admit of a good and a bad principle; they have lucky and unlucky days; their priests are dexterous jugglers, and profess to secure both men and beasts from the influence of evil spirits. Islam is predominant in all the great states of Moghreb, in Egypt, the greater part of Nubia, and among the Troglodytic family, although the Ababdes are not very strict in their observances; and the Danakil have neither priests nor mosques. It seems also to be professed throughout the north-eastern and central parts of Soudan; and the Mandingoes and other tribes have carried it even to the shores of the western ocean. Christianity is professed by the Copts in Egypt, and also in Abyssinia, where, however, it is mixed with many superstitious and idolatrous rites and notions. The European colonists profess, of course, the religion of their native country, and are protestant or popish, according to their descent. Judaism is maintained by a great number of Israelites throughout Barbary, Egypt, and Abyssinia; and there are a few Guebres, or votaries of Magism, in Mozambique.

GOVERNMENT.—All the various forms of government are found in Africa. The little Arab state of Damer, in Nubia, is a monarchical theocracy; Fouta-Toro and Fouta-Jalo, in Senegambia, are oligarchical theocracies; and the new kingdom of Sus, in Moghreb, is a feudal oligarchy. The governments of Marocco, Benin, Yarriba, and many others, are despotic, and the kingdom of Dahomey groans under a species of despotism of which there are few examples in the world. All the first-born males belong to the king, who causes them to be brought up publicly; he has even the monopoly of all the women of his kingdom, and every man who wishes to marry is obliged to pay him 20,000 cowries for a wife. The king of Moropua is perhaps the most absolute of all potentates, for he even prescribes to his subjects the time for their amusements. Several of the kings and chiefs of Guinea and Eastern Africa also exercise the most absolute power; they send their emissaries to steal men from whatever country they choose, and afterwards dispose of them to strangers in exchange for goods. It would, however, be a tedious task to mention in detail the governments of the numerous petty nations which people this continent. The governments of the great states are all despotic; and, of the smaller communities, many are patriarchal, and vary in different degrees between despotism and anarchy.

INDUSTRY AND COMMERCE.—Though the more civilised people of Africa are very far from equalling those of Asia in respect of industry, they are nevertheless not so degraded as is commonly believed. The people of the principal towns of Egypt, Barbary, Ardrah, Dagoumba, Ashantee, Bornou, and others, carry on various trades, and excel in the manufacture of different kinds of cloth, and in the dressing of skins. The district of Tafilelt and several towns in Marocco, and Kashna in Soudan,

are celebrated for the beauty of their leather (Morocco) and the preparation of skins. For sev years past the spun cotton of Damietta, Mansurah, Mehallet-el-Kebir, Foush, &c. in Lower Eg has acquired great importance. At the Isle of Zerbi, in Tunis, linen cloth and shawl- are manuf tured, which are in demand throughout Northern Africa. The negroes are in general bad bar men; but they are excellent fishers, good forgers, and expert goldsmiths; they can give steel a g temper, and reduce gold wire to an extreme fineness. The Foulahs and the Sousous work iron a silver; are dexterous workmen in wood, leather, and dye stuffs; and indeed among many of t negroes the art of dyeing is carried to a certain degree of perfection. The people of Loggun in B nou make cotton cloth of the finest and closest texture; and the goldsmith-work of Asiantee, D goumba, Sheeky, Jenneh, Timbuctoo, and other countries and towns of the interior enjoys a gr celebrity over all the continent; the work being of admirable finish and resembling filagree. T Bushmen of South Africa are good forgers, armourers, potters, and carvers; the Maquainas are s farther advanced, and work in iron, copper, and ivory. It is said the people of Haoussa make th own fire-arms. Several tribes of South Africa work copper mines; and others of them excel in t manufacture of *pagnes*, mats, and baskets, which are exported for the supply of the interior countri Some of the Moors of the Sahara are good dyers, armourers, and goldsmiths. The people of Whyd in Guinea and the Moonas in Congo, even cut precious stones and make of them pendants for th ears, bracelets, &c; and in Bornou it is said that there are people who cut precious stones a engrave seals. In spite of the obstacles presented by mountains and deserts, and the want of na gable streams, Africa has exhibited, from the remotest antiquity, a vast inland commercial moveme which still forms one of the most characteristic features of the continent. Timbuctoo, Jenneh, a other central towns of Soudan, are visited by caravans which set out every year from the extremit of Africa to exchange the produce of their own countries or of Europe and Asia, for that of cent Africa. Mourzouk, in Fezzan, and Cobbe, in Dar-Fur, are, as it were, the northern and the east gates of Soudan; and for several years the people of Angela have become the carriers of a great p of the trade of Soudan with Egypt and Tripoli. Since the Moroccans lost their influence in Tom buctoo, the Arabs of Suz have possessed themselves of all the trade which that city carried on w Morocco, and are become, like the Fezzaners and Furians, the immediate agents of the commu cial enterprise of Soudan with Moghreb. The Foulahs and the Sousous, and particularly the Ma dingoes, carry on its trade with the coast of Senegambia, and the Dagoumbas and Ashantees w the coast of Guinea. In the region of the Nile, Cairo is the great mart for the trade between Afri and Asia; and this great city, by means of the people of Angela, Fezzan, and Dar-Fur, and t merchants of Khartum and Berber, has commercial relations with the cities of Tunis, Algiers, F and Morocco, and the great towns of Soudan, Nubia, and Abyssinia. The town of Berber, likewi has become the great mart between Soudan, Abyssinia, Nubia, Egypt, and Arabia; and Commas has likewise become the mart of the trade between Soudan and the coast of Guinea. Speaking ge rally, we may say that commerce is to a certain extent the principal occupation of several Afric nations. Omitting the Jews, the Mandingoes, the Fezzaners, the Furians, and others already mention the following are the principal trading people: the Serrawoolis in Senegambia, who have long be famous for their address and intelligence; the Somaulis, who possess several ships, and exchange t produce of southern Abyssinia and the eastern corner of Africa for that of Arabia; the Ghibberti tribe of Arabs among the Dankali, who are the agents of almost all the trade of Abyssinia with Asi the Movizas, who manage nearly all the commercial business of the interior of Monomotapa. It curious also to see the *Lot-aber*, a people among the Iolo's, whose manners and customs resemble the of the gipseys; and the *Aromon* of the Grain coast and some other negroes, living between Cape S Ann and Cape Palmas, who leave their country for certain periods to carry on trade, or hire the selves as seamen on board of European ships; and also, to find a great number of the Foulahs a Kenouz performing the same active and laborious duties which are performed in Europe by the Sav yard-, Auvergnats, Tyrolese, Galleons, Friulese, Irish, and others. The most important commerci towns in Africa are: Fez, Marocco, Mogadore, and Tangier in Morocco; Algiers; Tunis; Tripoli Mourzouk and Ghadames in Fezzan; Cairo, Alexandria, Khartum, Berber, Suakim, Cosseir, a Massouah in Egypt and Nubia; Adowa in Abyssinia; Angornou and Bornou, Kano, Saccatoo, a Kashna in Central Soudan, Koulla in Nyffe, Commassie, Grand-Bassan, Cape Lahou, Yanci, & in Ashantee; Timbuctoo, Jenneh, Sego, Sansanding, Kankan in Western Soudan, Cape Coast, E mina, Bouny, Calabar, &c. in Guinea; St. Louis, at the mouth of the Senegal; Freetown, at Sier Leone; Cassanga, Yanvo, Bilé, Bailundo, Missol, Holondo, &c. inland, Cabenda, Ambriz, &c. on t coast of Congo; St. Paul de Loanda, Benguela, Mozambique, &c. in Portuguese Africa; Berbe in the colonies of the Seychelles. The articles most in demand in the interior of Africa are: pistol muskets, sabres, Venice glassware, of which incredible quantities are still imported, coarse woo and silk stuffs, pottery, brass-mounted cottons, muslins, writing paper, coral, razors, salt, perfum and spices. The principal articles of export are: goodelust, ivory, rice, wheat, gum, pepper, ostri feathers, raw hides, dressed hides, morocco leather, cotton, indigo, dates, senna, wax, aloes, copp natron, salt, teakwood, &c.; to which we must still add SLAVES. These formerly, not many years ag the staple article of African trade, and, in spite of all the laws and regulations made to the contrar the trade is still carried on with the greatest activity on both the eastern and the western coasts, a even across the desert by way of Tripoli and Egypt. The internal slave-trade, always great, appea even to have increased in consequence of the difficulties attending exportation by sea. The rulers Bornou, Baghermeh, Dar-Fur, and other Mahometan states, make frequent incursions upon the idolatrous neighbours, for the purpose of procuring slaves for sale; and even the pseudo christia Abyssinians seize the Shangallas for the same unhallowed purpose; and we may add, to their sham that the Anglo-Americans, and Brazilian-Portuguese, are now the grand encouragers of the traffic Among the different kinds of African money, salt, tibbar, and cowries deserve attention. Tibb or gold-dust, of which the great part is gathered in Central Soudan, is current throughout near the whole of Africa, where, in places the most abundant in gold, at Sansanding, for example, th value of this metal in proportion to that of silver is as 11 to 1, while in Europe it is as 15 to 1. The want of salt in several parts of the interior, and the difficulty of transporting so bulky an articl have considerably enhanced its value, that pieces of salt are used for money in many places. In the country of the Mandingoes, for instance, a piece of salt 2½ feet long, 11 inches broad, and 2 inches thic is worth from one to two pounds sterling; in Dar-Fur 12 pounds weight of salt are equivalent to a slave of 14 years of age, and in the market of Antalow in Tigre two or three pounds of salt are worth the thirtieth part of a dollar; at a greater distance from the place where it is produced, th value augments in proportion to the distance, till, according to Alvarez, a pound of salt is worth i weight in gold! Cowries, of no intrinsic value, are nevertheless the most common money in Souda and Guinea, and the trade-land of Senegambia. These pretty little shells, which are fished up in im mense quantities at the Maldives, have, in the interior of Africa, a value nearly ten times their wort in Bengal, where 2560 cowries are only equivalent to one shilling. The principal current money Abyssinia consists of pieces of cotton worth a dollar; and, when a smaller sum is required, the pie is cut into proportionate lengths.

SOCIAL STATE.—The preceding details exhibit in a great measure the social state of the people Africa, but the following additional particulars will serve to give a more complete, though neces

sarily a very imperfect view of this important subject. Africa presents several great indigenous centres of civilization, while for others it is indebted to Europe and Asia. The first and the most ancient, as well as the most important, is found in the region of the Nile, where, before the dawn of history, the Egyptians and the people of Meroë appear to have cultivated the arts and sciences, and where they have left the most imposing monuments of their industry and skill, along the banks of the Nile and the Azrek, and in the neighbouring oases. The ancient civilization of Axum and Gondar appears to have emanated from Meroë, while the social state of middle and lower Nubia, and the oases adjoining Egypt, appears to have originated from Egyptian colonies. This, at least, is the opinion of M. Balbi; but other antiquaries maintain that Egypt itself derived all its art and science from Ethiopia, or the upper region of the Nile. How civilization originated in Ethiopia, or in Egypt, if it took its rise there, it is impossible to discover. The other centres of civilization which are found in Soudan, deserve, no less than the first, the attention of philosophers. The particular character of the social system among the Foulahs and the Sousous in Senegambia; the progress made by the Ardrahs and their neighbours, before they were invaded by the Dahomeys, a progress which had carried them even to the invention of a kind of writing which may be compared with the quipuos of Peru; the imperfect civilization of the Dahomeys, Beninese, Dagoumbas, and other nations of Guinea and Congo, of the Movizas, Bushmen, Macquinis, and others in south Africa, afford some reason to believe that these people, free from every foreign influence, have followed a particular direction in the developement of their intellectual faculties, and have advanced but very slowly towards civilization. Among the Ashantees, the most powerful and most polished people of Guinea, there are several traditions, customs, and laws, which, as Bowdich thinks, may be attributed to their ancient connection with Carthage and Egypt: and this remark may be applied to several other nations of inland Africa. The people of Tombuctoo, Bornou, Kashna, Haoussa, and other countries of Soudan, appear to have been indebted to the Arabs, if not entirely, at least in a great measure, for the state of civilization, imperfect as it is, in which modern travellers have found them. As to the ancient and modern tribes of the great Berber or Atlantic family, which has successively come in contact with the Phenicians, Carthaginians, Greeks, and Romans, and afterwards with the Arabs, it is natural to believe that it is to these polished nations that they owe their small degree of civilization. To these two kinds of indigenous civilization we have to add two others foreign to Africa, into which, since the dawn of history, at four successive epochs, they have been imported by two European and two Asiatic nations, namely, the Carthaginians and the Arabs, of the Semitic family, and the Greeks and Romans of the Græco-latin family. But the influence of the Carthaginians, Greeks, and Romans, never extended beyond the Sahara. Towards the fourth century, Christianity was established in north Africa, along the slopes of the Atlas, in Nubia and Abyssinia, in the latter of which it still nominally prevails. Three centuries later the Arabs overran all northern Africa, crossed the Sahara, and passed along the east coast as far as Soffala, everywhere introducing Islam and its imperfect civilization: and even yet, in those countries, the Arabic language is almost the sole vehicle of civilization and science. But, beyond the pale of Islam, the whole of Africa is barbarous; most of the people are in the lowest state of savage life; and the modern Europeans have, for a period of three centuries, instead of endeavouring to introduce among them the civilization and the religion which themselves possessed, rather treated them as beasts, carrying them away in millions, as slaves; fostering all their evil propensities, and spreading desolation and misery over every region within the reach of their nefarious traffic.

DIVISIONS.—Our imperfect knowledge of the geography of Africa does not enable us to divide the continent into very distinct geographic regions; and the great number and the uncertainty of its political divisions prevent us from taking them as the basis of our descriptions. We shall therefore consider Africa under the following arbitrary heads of division: the *Region of the Nile*, including Abyssinia, Nubia, and Egypt; *Moghreb*, including Barbary and the Sahara; *Soudan* or *Negroland*, including Senegambia, Guinea, and the basins of the Kawara and the Tchad; or, in other words, all the region between the Sahara and the ocean, eastward to Abyssinia, and southward to the central mountains of the Moon; *Southern Africa*, including that portion of the continent which lies to the south of Abyssinia and the mountains of the Moon; and, lastly, *the Islands*.

REGION OF THE NILE.

THIS wide region comprises that portion of Africa which forms the western shore of the Red Sea, extending from 7° to 32° N. lat., for about 1750 miles, and between 30° and 43° E. long., with a breadth varying from about 1000 miles at the south, to 130 miles or less at its northern extremity. It is usually considered as divided into three large countries, named *Egypt*, *Nubia*, and *Abyssinia*; each of which will form the subject of a separate section, though the greater part of the region is now under the dominion of the Pasha of Egypt.

The grand characteristic of the region is the river NILE, which traverses its whole extent from south to north. According to the most recent information, the remotest sources of this famous river appear to lie in the mountains of the Moon, about 7° north lat. These unite to form a stream which, under the name of *Bahr-el-Abiad* (White river), flows north-eastward, through Dongo or Denka, and the country of the Shelluks, to 15° 34′ north lat., where it receives, on its right bank, the *Abawi* or *Bahr-el-Azrek* (Blue river), from Abyssinia. The White river appears to have been the true Nile of the ancient geographers, but, in modern times, it is only after its confluence with the Azrek that the united stream is known as the Nile, under which name it flows, in a general direction, though with various windings, almost due north, through Nubia and Egypt, into the Mediterranean Sea by two principal mouths. Its principal affluents, besides the Azrek, are the *Maleg* and the *Tacazze* or *Atbarah*, both on the right, from Abyssinia; but from the left no important affluent is known. In one respect the Nile is distinguished from every other river; for, between the junction of the Tacazze and the sea, a distance of 1500 miles, it does not receive a single affluent, but proceeds in solitary grandeur through the desert, fertilizing only a narrow strip along its banks of a few miles in breadth, which constitutes the cultivated portion of Nubia and Egypt. The Bahr-el-Abiad has been explored by M. Linant, to the extent of 132 geographical miles above its confluence with the Azrek. As he sailed along he sounded occasionally, and found always from three to four fathoms; the river was, in many places, a mile and a half wide, and even then was far within its banks, which sometimes seemed four miles distant from each other; but even this is not the full width at its greatest height. There are several islands in the stream, and these as well as the banks are covered with large trees of a splendid green, in the higher parts no longer obscured with brushwood, but standing in groves amidst a rich herbage of the finest hue, as in an English park. But, a few miles above Aleis, where Linant stopped, the river, he was informed, is only knee-deep, in consequence of its great width. Of its higher course very little certain information has yet been received. Ibrahim Kashef, an officer of the Pasha, travelled for 35 days along its banks, partly on both sides; and at the highest point he reached, probably 10° N. lat., 29° E. long., the river was shallow, full of islands, six hours in breadth, but with no mountains in sight. The great breadth, though perhaps exaggerated, and not very intelligibly described, leaves little doubt that the river, even at this extreme point, was much broader than at its junction with the Azrek, and seems to indicate that its conformation is of an extraordinary kind, its origin being perhaps in a lake or lakes, supplied by streams from a distant range of mountains. The existence, moreover, of lakes having a communication with the river only during floods, is rendered highly probable by a passage in Linant's Journal, which states that at the time of the inundation of the Abiad, an incredible quantity of fish is brought down by the current. M. Russegger, however, writing from Rosserres in the country of Fassoglo, in December 1837, says that with respect to the White river, he had reason to be convinced that it flows in a direction precisely contrary to that assigned it on the maps, for it rises in the country of the Galla and Shangalla, and flows parallel to the Blue river.—(*Ath naeum*, 5th *May* 1838.) Be that as it may, the Bahr-el-Abiad is undoubtedly the principal branch of the Nile. It discharges a greater quantity of water than the Azrek; and, though somewhat narrower at the confluence than it is higher up, it is even in this respect equal to the other. The colour also of its water is that which characterizes the united stream in the dry season, the Azrek being then of a greenish hue, while the Abiad is always white, and has a soapy appearance, even during the inundations. But, at the confluence, the Abiad is only 180 feet across, and, further down, the general aspect of the river has much more of the character of the Azrek than of the Abiad: in every respect resembling the former as to the nature of its banks and adjoining scenery, width, sinuous course, sand-banks, and the want of large shells, such as are only to be found on the banks of the Abiad. Below, also, as along the banks of the Azrek, there are comparatively few waterfowl, while near the Abiad these are innumerable.—(*Jour. R. Geog. Soc.* vol. II.) The Bahr-el-Azrek, however, has by many been considered to be the Nile. It rises from a small marshy plain, in the country of the Agows, 125 miles S.S.W. of Gondar, and takes a circuitous course through the lake of Dembea to the south-east, south, west, and north-west, in which last direction nearly it continues through almost 6° of lat. till it meet the Abiad. It was the source of this river that was visited by Bruce, as the source of the Nile; and it is indeed well entitled, from its size, and the length of its course, to dispute the honour with its rival; at the confluence, it is at least as wide though it discharges a smaller quantity of water. In the dry season its water has a greenish hue; but during the annual flood, it becomes reddish, from the nature of the mud brought down by the *Bahr Toumat*, which falls into the Azrek in the province of Fazuolo. The Azrek is the *Astapus* of the ancient geographers; and its principal affluents are: the *Dender*, and the *Rehat*, on the right; the *Roma*, *Yabous*, and *Toumat*, on the left. The only affluent of the Nile, below the great confluence, is the *Tacazze* or *Atbarah*, on the right, in lat. 17° 40′ N. This stream has its source in the high mountains of Lasta, and forms with the Nile the famous peninsula of Meroë. Near its confluence with the Nile it receives on the right the *Bahr Mogren*, which brings down such a quantity of black earth that it affects the general colour of the river. After the junction of the Abiad and the Azrek, the Nile makes a remarkable bend, like a great S, flowing 200 miles south, and then turning again to the north, its width varying exceedingly from more than a mile to less than a quarter of a mile, and its channel being studded with innumerable islands, clothed with the richest vegetation. In its progress through Nubia it forms six cataracts. The first occurs about midway between Hallfaiah and Shendi; the second, below Berber; the third, above Meraweh; the fourth, at Hannek; the fifth, at Wady Halfa, is formed by a multitude of rocky islands, among which the river dashes amidst clouds of foam, and is tossed in perpetual eddies; the sixth, and lowest, between Philæ and Elephantine, 24° N lat., where there is a considerable fall, the greatest height, however, being only five feet perpendicular; but the bed of the river is for several miles thickly strewed with granite rocks, and narrowed to half a mile. These cataracts, however, are usually numbered upwards, the sixth being reckoned

the first, and the first the sixth. The Nile consists of too large a body of water to be lost in the immense desert through which it flows, but it diminishes gradually as it proceeds northward. It is narrower at Cairo than at Siout; and narrower at Siout than at Thebes; but from Wady Halfa to Thebes, its volume continues apparently the same. An immense quantity of the water is diverted from the river, and exhausted in artificial irrigation; and, when the great canals of Egypt were kept in good repair, the river must have been still more diminished towards its mouth. At Assouan its width is about 3900 feet; at Hajar Silsili, only 1700; at Oudi, 36 miles above Cairo, 2900; at Rosetta, 1800, and at Damietta, only 800.

§ 1. *EGYPT.*

SITUATION AND EXTENT.—This ancient and celebrated kingdom, is situate in the north-east corner of Africa, between 24° 3′ and 31° 37′ N. lat., and 29° and 35° 25′ E. long.; but of this large space of 150,000 square miles, little more than a tenth part is occupied by cultivable soil, the remainder consists of salt marshes, sandy plains, or rocky and barren mountains. The cultivated land of Egypt consists of the long narrow valley of the Nile, which measures above 500 miles along the course of the river, with an average breadth of only eight or ten miles; and a large triangular plain, measuring about 150 miles along the sea, from which it extends about 100 miles inland to the point where it joins the valley. Besides these, there is likewise the province of Faioum or Fyoum, which is watered by a branch of the Nile, and comprises about 340 square miles.

The average breadth of the valley of the Nile between Cairo and Edfou is only about 7 miles; and that of the cultivated land, whose limits depend on the inundation, scarcely exceeds 5½, being in the widest part 10¾, and in the narrowest, 2 miles, including the river. The extent of the Delta may be estimated at 1976 square miles, and the whole northern district, capable of being irrigated, including the Delta, at 4500 square miles, or double the whole arable land of the valley, which may be computed at 2255 square miles. That the irrigated part of the valley was formerly much less extensive than it is at present, at least wherever the plain stretches to any distance east and west, or to the right and left of the river, is evident from the fact of the alluvial deposit constantly encroaching in a horizontal direction upon the gradual slope of the desert; and, as a very perceptible elevation of the bed of the river, as well as of the land of Egypt, has been constantly going on, it requires no argument to prove that a perpendicular rise of the water must cause it to flow to a considerable distance over an open space to the east and west. Thus the plain of Thebes, in the time of Amunof III., or about 1430 B. C., was not more than two-thirds of its present breadth; and the statues of that monarch, round which the alluvial mud has accumulated to the height of nearly 7 feet, are founded on the sand which once extended to some distance in front of them. How erroneous, then, is it to suppose that the drifting sands of the encroaching desert threaten the welfare of this country, or have in any way tended to its downfal; and how much more reasonable is it to ascribe the degraded condition to which Egypt is reduced, to causes of a much more baneful nature, foreign despotism, the insecurity of property, and the effects of that old age which it is the fate of every country, as well as of every individual, to undergo. It is true that the sand has accumulated about Bahnasa, and on the irrigated land in its vicinity, as well as about Kerdasseh, and a few other places, owing to the form of the valleys, which open in these spots from the Libyan desert, but this effect is not general throughout the valley of the Nile, even on this side of the river; and the progress of the sand can never be very great in any part of Egypt, however it may extend itself in Nubia over the exposed and narrow strip of land which the western bank presents above the cataracts of Assouan.—(*Wilkinson*, I. 218, 219.) For the satisfaction of those who will be content with simple facts it may be sufficient to state, that the breadth of the irrigated portion of the valley is much more extensive now than it was at any former period, and that this increase will continue in spite of the very few local impediments which the drifted sand may accidentally offer; and it is not irrelevant to observe, that no soil is better suited for many kinds of produce than the irrigated edge of the desert (which generally consists of a clay mixed with sand) even before it is covered with the fertilizing deposit of the inundation.—(*Ib.* 222.) From the first cataract of the Nile to the mouth of the river at Rosetta, the perpendicular stratum of soil decreases in thickness as it approaches the sea; and thus at Elephantiné the land has been raised about 9 feet in 1700 years, at Thebes about 7, and so on, gradually diminishing to the mouth. There, indeed, the deposit is lessened in a very remarkable degree, much more than the regular decreasing ratio, in consequence of the greater extent of the land, east and west, over which the inundation spreads; so that in a section representing the accumulated soil and the level of the low Nile, the angle of inclination would be

much smaller from the head of the Delta to the sea, than from the Thebaid to the Delta. The formation of Egypt and its extensive Delta are beyond the reach of inquiry, and of a date long anterior to the period at which that country or Ethiopia was inhabited. In the times of the earliest Pharaohs, of whom any record now remains, the whole of Lower Egypt seems to have been densely inhabited (*Ib.* 9, 11); and hence we have evidence that the mountain chain the Delta has been protruded into the sea, to an great extent, within the age of history. If it had ancient cities, which were built two thousand B.C. or 4000 years ago, and still are so, they ought now to have been far inland. — *Wilkinson, Journ. R. Geog. Soc.* IX. 432.)

GENERAL ASPECT. — The valley of the Nile is bounded on both sides by ranges of mountains, which follow the course of the river from the cataracts to near Cairo, where they diverge, the western range extending from that point north-westward to the neighbourhood of Alexandria, while the eastern range stretches eastward to the head of the Red Sea. The general character of the western range is that of a limestone formation, containing numerous fossil shells; but from Luxor to Assouan the formation is sandstone alternating with limestone, and containing also slate and quartz of various colours. Above Assouan the formation is granite, mixed with syenite and some other crystalline primitive rocks. The eastern range differs somewhat in character, as it rises more abruptly, and often approaches close to the margin of the river. The limestone extends as far south as on the western side; but the granite formation commences earlier. Near Assouan the granite alternates with decomposed sandstone, and in the same neighbourhood are found the granite quarries which furnished the materials of the ancient temples, obelisks, and statues. The elevation of these mountain ridges is only a few hundred feet, and the northern branch, which extends from Cairo to Suez, the Jebel Mokattam, and Attaka, does not exceed 400 feet. In both ranges there are numerous ravines which afford passages from the banks of the Nile into the eastern and the western deserts. The great valley itself has the same inclination as the waters of the river, which is about two inches in the mile; so that Assouan, being about 640 miles from the sea, should be only about 107 feet above its level. The slope, however, is not gradual through all this distance. It is greatest immediately north of Assouan, where the fall of the water is seven inches and a half in the mile, and diminishes almost to nothing as it approaches the Delta. The bed of the river, however, does not lie along the *bottom* of the valley, but along the top of a narrow ridge formed by the continual deposit of mud during the inundations: and the same is the case with the Bahr Jousef, whose channel likewise forms a narrow ridge, with a hollow between it and the Nile. The banks consist of a succession of rich plains of unequal width, studded with little groves of palm trees, each of which hides a village. These groves, animated by innumerable flocks of turtle-doves, pigeons, and other birds, are surrounded with cultivated land, which is sometimes covered by the inundations, and on the returning of the waters, or at other seasons, by means of irrigation, is clothed with the richest verdure and the most luxuriant crops. — *Hoskins' Visit to the Great Oasis, &c.* Lond. 1837.)

At the northern end of the long valley, below the point where the mountains diverge, and between them and the sea, lies the alluvial plain of Lower Egypt, which is almost a dead level, intersected by the two great branches of the Nile. These branches form between them the celebrated *Delta*, a triangular island, measuring eighty miles at its base, and about ninety in a straight line, along each of its other sides, which, however, follow the windings of the river; and are therefore very irregular. On each side of the Delta is a level plain of the same character, the greater part of which appears to have been formerly included within it, when the Nile reached the sea by seven branches. The whole of this plain, beyond as well as within the Delta, is intersected in every direction by numerous canals, which convey the waters of the river to all parts of it, thereby producing a continual verdure; and, during the period of the inundation, a great part of its surface is covered with water. Eastward of the Delta is a singular valley, thirty-nine miles in length by two in width, and containing about 20,000 acres, formed by two parallel mountain ranges which screen it from the sands of the desert. The soil is rich and productive, and is covered with an exuberant growth of shrubs and copsewood. It is crossed by the ancient canal, between the Nile and the Red Sea; and is supposed, with great probability, to have been the land *of Goshen*, where the Israelites were settled. The western part of it is now called *Wady Tomylat*, and the eastern, *Wady Sababyar*. About sixty miles above Cairo, a gap in the western mountains affords a passage for a branch of the Nile into a large district called *Fyoum* or *Faioum*, through which the water flows in numerous streams to the Birket-el-Keroun, or ancient Lake Moeris, converting a large portion

of desert into the most fertile and the most beautiful province of the kingdom. Here the eye is never weary with contemplating the smiling fields, which are covered with a luxuriant and almost tropical magnificence of vegetation, and form a splendid contrast to the barren desert that everywhere surrounds them, and of which they seem to have been once a part. The Faioum is densely peopled, and is never visited by the plague. The aspect of the cultivated parts of Egypt undergoes periodical changes with the seasons. In our winter months, the verdure of Egypt is rich and beautiful. The air is perfumed with the odours of the orange and citron trees, and of innumerable shrubs; and the flocks overspreading the plain add animation to the landscape. The country now forms one delightful garden, though somewhat monotonous in its appearance; for, on every side, it presents nothing but a plain, bounded by whitish mountains, and diversified with clumps of palm trees. In summer, however, it exhibits merely a brown soil, either miry, or dry, hard, and dusty; immense fields under water; vast spaces unoccupied and uncultivated; plains, in which the only objects to be seen are date trees; camels and buffaloes led by miserable peasants, naked and sunburnt, wrinkled and lean; a scorching sun, a cloudless sky, and constant winds which vary only in force. It is not therefore surprising that travellers have differed very much in their descriptions of this interesting country.

Beyond the limits of the cultivated regions are several portions of the deserts which are worthy of notice. In the desert, south-east of Alexandria, are two parallel valleys, called the *Basin of the Natron Lakes*, and the *Bahr-bela-maie*, or waterless river. The former contains a series of six lakes lying in the direction of the valley, the banks and waters of which are covered with crystals of chloride of sodium or sea-salt, and carbonate of soda or natron. The Bahr-bela-maie lies to the south-west of the valley of Natron, from which it is separated by a small ridge; it is about eight miles wide, and is everywhere covered with sand. It is said to join Faioum on the south, and the Mediterranean Sea on the north-west, and is supposed to have once formed the bed of the Nile, or at least of one of its branches; and, to strengthen this conjecture, petrified trunks of trees and fish-bones have been found beneath the surface. The vegetation in both valleys has a wild and dreary aspect; the palms are mere bushes, and bear no fruit. The Natron valley is inhabited by Greek monks, who have there four convents, which serve at once as their fortresses and their prisons. Farther south are several *oases* or *wahs* scattered over the desert, within the nominal limits of Egypt. Their physical character is pretty much the same, consisting of small tracts or valleys irrigated by springs of water, and producing dates; the larger ones yield wheat, rice, barley, clover, liquorice, olives, apricots, vines, pomegranates, and other fruits. The first which occurs, in advancing southward, is the *Little Oasis* or *Wah-el-Bahryeh*, or *Wah-el-Behnesa* or *Behnasa*, three days' journey south-west of Faioum. It pays a yearly tribute of about £643 sterling, and has an armed force of several hundred men to preserve the peace. A short day's journey south of it is the small oasis of *Wah-el-Hayz*; and three days further south is that of *Farafreh*. Westward of Esneh on the Nile, between 29° and 30° E. long. is the *Great Oasis*, called by way of eminence *El Wah*, which extends in length between 24° 30′ and 26° N. lat., about 100 miles. It contains many springs and villages, with the ruins of Egyptian, Roman, Christian, and Saracenic buildings. Its chief town is El-Khargeh. Three days' journey westward is the *Wah-el-Dakhleh*, *Dakkel*, or *el Gharbe*, which contains eleven villages or towns, and 6000 male inhabitants. Its principal village, is *El Kasr Dakkel* or Dakhleh, in 25° 35′ N. lat. and 28° 55′ E. long. *Wah-Zerzoora*, *Wah Gebabo*, and some others, lie still farther west. But the most interesting of all these *wahs* is that of *Siwah*, 310 miles due west of Benisouef on the Nile, which contains the remains of the celebrated Temple of Ammon, visited by Alexander the Great, and other antiquities; a large and strongly fortified town, with a population of 2000, and several villages. It was conquered by the Pasha of Egypt in 1820. About 25 leagues N.W. of the capital is the salt lake of *Arachieh*, about six or seven leagues in circumference, with a rocky islet, which the Siwahians say contains the sabre and seal of the Great Prophet, or, according to others, the ring, sword, and crown of King Solomon-ben-Daoud, the great magician of the East.— (*Hoskins' Visit to the Great Oasis, &c. &c.*)

The general character of the eastern desert is that of a mountainous region, which, though generally barren and rocky, contains a number of wadies or ravines, fertilized by springs, and clothed with vegetation. Mines of various metals, and quarries of porphyry and other valuable stones are scattered among the mountains. A range of hills, called Jebel Mokattam and Jebel Attaka, extends from Cairo to Suez; to the south of these are other ridges stretching nearly in the same direction, with inter-

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Lower Canals.—The

Upper Egypt, they are defended only by fences of earth and reeds, which easily give way before the strong pressure of the superabundant water. There are great disparities in the statements of different writers respecting the height which the inundation ought to reach to be beneficial. According to Wilkinson, who is probably the best informed, the lowest rise is 18 cubits; the canals are then cut; 19 cubits he calls tolerable; 20, good; 21, sufficient; a rise of 22 feet fills every canal; a rise of 24 feet would overwhelm and ruin the villages. A cubit exceeds 21 inches; hence, in order fully to fertilize Egypt, a perpendicular rise of 38 feet is required. Besides the prodigious quantity of earth brought down by the flood from the countries in the interior, the banks of the river itself, in Egypt, are also undermined to a great extent, and the material is carried down to be deposited at the base of the Delta, where new accessions are constantly making to the alluvial formation of the coast, while the direction of the channel of the river is perpetually changing. The salubrity of the water of the Nile was highly extolled by the ancients, and is acknowledged by most modern travellers. If Mahomet had tasted it, the Egyptians say, he would have supplicated heaven for a terrestrial immortality, to be enabled to enjoy it for ever. It is said to be laxative, owing to certain neutral salts which it contains; but, during the three summer months, before the inundation commences, it requires to be filtered before it can be safely used. During the flood it first acquires a green colour, sometimes pretty deep; after thirty or forty days the colour becomes brownish red; and, again, during the low season it becomes quite clear. In many circumstances the Nile differs from all other rivers: for 1500 miles it pursues its course alone, without receiving a single affluent; the country through which it flows is not liable to falls of snow or hail, seldom even of rain; its waters, consequently, receive no taint from the noxious qualities of earths or minerals, except those in its immediate channel; the air, pure and serene, generates no unwholesome fogs; and its banks are unpolluted by the filth of any great cities, as it flows for the most part through rocky deserts or vast expanses of sand. In this long course, it exposes generally to the sun and air a broad surface, and is gradually purified as it advances towards Egypt. During the rainy season, and towards autumn, when it is filled with torrents from the mountains, its waters are muddy and unwholesome; and this is accordingly the principal unhealthy season in Lower Egypt; but at other times there is scarcely a river in the world whose water can be compared in quality with that of the Nile. The average current of the river is about 2900 yards per hour, but it is considerably increased during the period of the inundation. The prevalence of northerly winds more than compensates to vessels bound upwards the rapidity of the stream. The general depth at low water is about six feet (1.830 metre). There is much danger, however, in the river, occasioned by sudden squalls.

At Farshout, in lat 26° 12′ N., a canal, named *Bahr Joussef*, *Moye Souhaj*, &c., issues from the west bank of the river, and runs parallel with it for 250 miles to Benisouef, where one branch diverges towards Faioum, while another flows onward as far as the Delta. It is in some places several miles distant from the river, flowing, like its parent stream, along the top of a ridge formed by the mud of its inundations, leaving a space of low ground between them. Its breadth varies from 50 feet to 300; and it has all the appearance of a natural river, though it is undoubtedly artificial. The branch which flows into Faioum divides into numerous streams, which fertilize the district, and ultimately find their way to the *Birket-el-Keroun*, a large lake of brackish water, about 30 miles in length, with a breadth varying from eight miles to less than one. This lake was believed by the ancients to have been entirely artificial, and to have been dug by king Mœris, for the double purpose of preventing the low country from being damaged by the superabundant overflowing of the Nile, and of serving as a reservoir to supply water during the low season. Herodotus accordingly reports that during one half of the year the Nile flowed into the lake, while, during the other six months, a stream flowed out of it. Of the latter, however, there is no remaining trace; and the great works contrived by Mœris to regulate the water have disappeared. The lake has at present every appearance of occupying a natural basin, though, certainly, its only apparent feeders are derived from the Nile. Mr. Wilkinson, moreover, insists that Herodotus's account of the water returning from the lake to the Nile is totally inapplicable to the lake Mœris, the level of its surface being about 100 or 120 feet lower than the bank of the Nile at Benisouef; which, making every allowance for the rise of the bed of the river, and the proportionate elevation of its banks, could never have been on a level, even in the time of Herodotus, with the lake Mœris. It is the canal of Joussef to which, he says, the account of Herodotus is alone applicable, as being the work of human hands, and returning

ns water to the river — *Topography of Thebes, &c.* 354.] The view of the la
Kernak is remarkably grand. It is equal in breadth to the lake of Geneva, bet
Zurich and Thun, and though differing in its accessories from every sheet of w
in Europe, it presents to the burning desert and mountains, and the uncultiv
plains which surround it, and to its own unmitigated waves, features not less calcu
to excite the most intense and grand emotions of grandeur and sublimity. Toward
east the shore is a long promontory of a series of wave-like sandhills, which, as th
turns westward, gradually diminish in height, losing gradually into mountains, w
are naked and white and extend westward to the extreme verge of the horizon.
Nowhere is the contrast between the traveller and contemplates it from the verdant p
of the Faioum more striking. Absolute solitude prevails on all sides; and no
presents itself to the eye that can suggest a reference to human society: but
many flights of water-fowl, as pelicans, wild-ducks, gulls, petrels, and white ib
are seen; while the surface of the lake is the scene of swimming on the lake;
the waters abound with innumerable varieties of fish. Whatever may be the
towards the middle, the water is extremely shallow near the land, and the bo
in many places consists of shell-sand, such as is everywhere deposited by the
Modern Egyptians and Thebans, see *Egypt as it is; or Travels in the V*
of the Nile. By James Augustus St John. London, 1834; vol. II. 238-41
have taken the deepest part, found the water of a brackish taste; not to the d
men, and the Pharaohs, who thought it "almost as salt as the sea;" but suffici
to render it disagreeable, though not unfit for drinking. The fisheries of the
and the Bahr Yousef were farmed at 300 purses per annum, or about £4000 ste
The Arabs call the lake *Bahr-el-Kerun*, or lake of the horns, but for what r
is uncertain.

The only other canal which deserves particular notice is the *canal of Mu*
d, recently formed by the Pasha to afford a navigable communication between
andria and the Nile. It runs from Alexandria to the Nile at Atfeh, near Fou
a serpentine course of about 40 miles: its mean depth being much above the le
the river, and its breadth averaging perhaps 200 feet. There is a sluice at each
to regulate the admission or escape of the water, but no means for the passa
boats. The canal is in fact a large ditch, without science in the plan, or skill i
execution. It is so contrived that the distance is increased about one-third, wi
the slightest necessity existing for deviating from a straight line. Though
nally constructed by the labour of the whole population, it likewise supplies Alexandria
water, and serves to irrigate the lands on both sides. The making of this
was commenced in 1819; and from the scarcity of the labour, to which they
unaccustomed, combined with the treatment and want of food and pure water, 2
persons perished in ten months, and were buried in the embankments.

The *canal of Nechoas* is now entirely filled up; but vestiges of it are still fou
different parts of the valley between Suez and the Nile, and it has been seriously
posed to restore it through part. The *Khalij*, or canal of Cairo, leaves the river
Fostat, and flows directly through the city to the *Birket-el-Hadjee*, or pilgrim's-
so called from its being the place where the great caravan of Mecca assembles.
other canals for the purposes of irrigation intersect the deltaic plains, and one t
ler has counted so many as 6000; but these channels, rapidly filling up by the m
deposite, retain considerably less water than formerly; and the natural birke
pools, increasing in extent in proportion as they become shallower, spread ove
fertile fields, and diminish the cultivated land. Much of the water which shou
retained in these reservoirs is thus lost by evaporation, and in the canals by int
tion, and the insufficiency of the banks; and hence the inhabitants of the villag
seldom command a supply of water for any length of time.— *St. John*, II. 353.

Besides the freshwater lakes already mentioned, there are several salt water lakes along the
as the *Marcotis*, *Mareotis*, *Et-Bourlos*, and *Menzaleh*. The lake Marcotis is a large shallow l
to the south east of Alexandria, studded with islands, and separated from the sea on its north
side by a long ridge of sand-hills. It is of great antiquity, but was dry for many centuries t
sea was let in to its bed by the British army in 1801. The lake Maadie or Aboukir lies to the
east of the Marcotis, separated from it by a narrow strip of land. The lake of Etko is a long n
lagoon, a little farther east. The lake Bourlos lies to the east of the Rosetta branch of the Nile
lake Menzaleh lies to the east of Damietta, and is bounded on the north and north-east by
narrow strip of low land which separates it from the sea. It communicates with the sea by tw
gable channels; but the southern portion of the lake itself, to the extent of about one-third of it
face, is not navigable, and the remainder is very shallow. It measures about 50 miles in l
from north-west to south-east, with a breadth varying from 12 miles to 30. It contains s
islands, and abounds with fish, which afford employment and subsistence to a numerous c
rather savage fishermen.

CLIMATE.—From the nature of its surface, and the general aridity of th
rounding deserts, Egypt is much hotter than most other countries under the

parallel of latitude. At some distance from the sea the heat of the plains is at all seasons scorching; but it sometimes happens that the violent north winds depress the temperature, even near the tropic, to the freezing point. The general height, however, of the thermometer, in the depth of winter, in Lower Egypt, in the afternoon, and in the shade, is from 50° to 60° Fahrenheit: in the hottest season it is from 90° to 100°; and in the southern parts of Upper Egypt it is generally about ten degrees higher. But though the summer heat is so great, it is seldom very oppressive, being generally accompanied by a refreshing northerly breeze, and the atmosphere is at the same time extremely dry. The nights of winter, on the contrary, are exceedingly cold in Lower Egypt; and, indeed, the keenness of the night air at that season is almost incredible. Every where in the shade it is cold, even by day, and a strong breeze constantly prevails, which increases the sharpness of the atmosphere; rendering it prudent, even in the sunshine, to go warmly clothed. To the neglect of this precaution may be attributed many of those dangerous attacks of fever and dysentery which travellers frequently experience in Egypt. — (*St. John*, I. 139.) The wind is very regular in June, July, August, and September, when it blows almost without interruption from the north and north-east. During the day, at that season, the sky is clear, without clouds or mists; but after sunset the cooling of the air condenses the vapours, which are then observed to pass with a hurried motion from north to south, which continues till after sunrise, when the solar heat rarifies them anew, and renders them again invisible. The period of the decrease of the Nile is accompanied by intermitting winds, which, however, still blow from the north, but with intervals of calm weather. In winter the winds are changeable; but at that season the cloudless atmosphere gives free scope to the solar rays, and the vegetation becomes luxuriant. The only symptoms of moisture then in the atmosphere are the abundant dews deposited in the night, and the fogs which appear in the mornings, though the latter are comparatively unfrequent. In the same season it occasionally rains in Egypt, but chiefly near the sea. At Cairo there are, on an average, four or five showers during the year, and in Upper Egypt only one or at most two. "Indeed," says Mr. St. John, writing near Benisouef, "nothing can be more incorrect than the opinion that it never rains in this part of Egypt. During the first week we were on the Nile it rained at least ten times, not slightly or sparingly, as if the climate were not used to it, but in long, heavy, drenching showers, which thoroughly soaked the earth, and must have been greatly useful in forwarding the processes of vegetation." —(I. 221). The approach of the vernal equinox changes the appearance of the country; the hot south wind then begins to blow, and continues at intervals during a period of somewhat more or less than 50 days (thence called the *khamseen* or *khumaseen*), commencing in April, and lasting throughout May; but it seldom blows for more than three days in succession. During its continuance the atmosphere becomes troubled, sometimes acquiring a purple tinge; a dry burning heat prevails every where, and whirlwinds, like the blasts of a heated furnace, sweep over the country, often raising the sand and even small stones to a considerable height, so as to form a black cloud, and afterwards depositing them in large heaps on the ground. The fine sand is forced into the houses through the smallest crannies, and every place is filled with it. These winds, though they seldom cause the thermometer of Fahrenheit to rise above 95° in Lower Egypt, or in Upper Egypt, above 105°,* are dreadfully oppressive even to the natives. During spring and summer the simoom blows occasionally, coming from the south-east or south-south-east, and carrying with it clouds of dust and sand. It is still more oppressive than the khamseen winds, but seldom lasts longer than a quarter of an hour or 20 minutes. The season of the khamseen is the only time in which the atmosphere of Egypt is generally unhealthy, and it is then that the plague, the fatal scourge of the Levant, is most severe. The ophthalmia, however, another very common Egyptian disease, makes its greatest ravages during the inundations, a circumstance which proves that it is not entirely owing to the glare of the sun and the heat of the khamseen winds.

VEGETABLE PRODUCTIONS. — To its singularly constituted atmosphere, and to the regular inundations of the Nile, Egypt owes the advantage of containing within its limits almost all the cultivated vegetables of the old world. The cultivated plants may be divided into two great classes; the one consisting of those which grow in the mud of the Nile; and the other embracing those produced on ground beyond the reach of the inundation, but which is watered artificially. In the first class are wheat,

* "This is the temperature in the shade. At Thebes I have observed the thermometer to rise above 110° during a khumaseen wind in the shade."—*Lane*, I. 3.

barley, spelt, beans, peas, lentils, sesamum, mustard, flax, anise, carthamum fronwood, tobacco, lupins, vetches, barsim or Egyptian trefoil, fenugreek, pum melons, cucumbers, and lettuce. The cucurbitaceous plants, and also tobac lupins, generally cover the banks of the river as the water subsides; the melo cucumbers grow almost visibly, but are generally watery and tasteless; the t is weak, but is reckoned much pleasanter to smoke than that of America. plants produced in the irrigated lands are chiefly the *holcus dhurra* or durrah, forms the common food of the people; its leaves are used for feeding cattle, stalks serve as fuel for the ovens; sugar-cane, indigo, cotton, and pot-herbs. C in particular, has lately become an article of great commercial importance; it is vated in large quantities, and is generally of excellent quality, though produce little more labour to the cultivator than planting and watering it. The sugar- also now grown in considerable quantity, and the manufacture of sugar is in a fl ing condition. Faioum is distinguished for its roses, which produce the muc rosewater: it also produces rice; but the best quality of that grain is raised the marshy grounds of Lower Egypt, and particularly near Lake Menzaleh, w was introduced in the time of the Khalifs. Of fruit-trees, the almond, the w and the cherry are not fonnd in Egypt; the pear, the apple, the peach, and the are neither abundant nor good; but citrons, lemons, oranges, pomegranates, ap and bananas prosper abundantly; and the colocynth or bitter apple has bec article of considerable trade. The sycamore or Pharaoh's fig, less valued for it than for its deep and broad shade, the carob, the jujube, the tamarind, and othe are cultivated; but none of these are equal, in number or usefulness, to the palm, which is cultivated alike in the lands that are naturally or artificially irri Groves of these palm-trees are to be seen containing 300 or 400, and sometim sisting of several thousands together. The olive tree is only met with in ga but there are some plantations, where the people preserve their fruits in oil, a them all over Egypt. The vine, in ancient times, formed an interesting branch ture, and produced the choicest wine; but at present it is only cultivated for its and its grapes. But all these vegetable productions are not found every where vary in different provinces; and some belong almost exclusively to particular di Clover, so abundant in the Delta and Lower Egypt, is rarely cultivated in th baid, where its place is supplied by gilban *(lathyrus sativus, L.)* Rice belo clusively to the Delta and the oases; and cole-seed, gortum, poppies, and l are almost confined to Upper Egypt, where also the greatest quantity of du cultivated. Date-trees are more abundant in the north; while vines, figs, ros olives, are limited to Faioum, and the gardens contiguous to large towns.—(son's *Topography of Thebes, &c.* 267.) There are plantations of mulberry t Wady Somulat, in the provinces of Sharkiyeh, Mansourah, Menouf, Garbiyeh, K Damietta, Rosetta, and Gheeza, consisting altogether of about 3000 fedd land, and three millions of trees.—*(Bowring*, 21). A large and beautiful frui celebrated among the ancients, the *persea* of the Greeks, seems to have disap from Egypt; but another plant, which makes a conspicuous figure in ancient wr the *lotus*, still remains. The plant properly so called is a species of *nymp* water-lily, which, after the inundation, covers all the canals and pools with its round leaves, among which the flowers, like cups of bright white or azure blu with inimitable grace on the surface of the water. The rose-lily of the N Egyptian bean, which is sculptured on the monuments, is not now found in the try. The *papyrus* is still found, and the *colocasium* is still cultivated for the s its large esculent roots. Many of the gardens of Egypt are beautiful in appea and rich in the products which they yield; the most celebrated are under the c Europeans; that of Ibrahim Pasha, in the island of Rhoda, is one of the most a tive. It contains several hundred teak trees in a flourishing state, all of whic grown from seed. The bamboo, the yam, the caoutchouc, the ginger, and the a root, have also completely succeeded, and may be cultivated without difficulty t extent. The custard-apple has likewise been introduced, and prospers. The vation of coffee and tea has also been tried, but without success; the soil not seem to be favourable to their production. But, though Egypt is so rich i tivated plants, it is entirely destitute of forests. The banks of the river and c canals sometimes present coppices of acacias and mimosas, and are also adorned groves of rose-laurel, willows, saules-kalef, casias, and other shrubs; and F contains impenetrable thickets of *cactus*, or the prickly pear; but none of thes nish fire-wood, and all the fuel which is used in the country is brought from Ca nia. The peasants burn cow-dung, which they collect with an almost ludi

assiduity. The cultivable land of Egypt is never at rest; every month has its flowers, and every season yields its fruits. In January, lupins, dolichos, and cummin are sown in Upper Egypt, while the wheat shoots into ear; and in Lower Egypt the beans and the flax are in flower Towards the end of the month, the orange, the citron, and the pomegranate begin to be covered with blossoms. Sugar-cane, senna-leaves, and various kinds of pulse and trefoil are then cut down. In February all the fields are green; the sowing of rice begins; the first barley crop is cut; cabbages, cucumbers, and melons ripen. March is the blossoming season for the greater part of plants and shrubs; the corn sown in October and November is now gathered; and the only trees not yet in leaf are the mulberry and the beech. The first half of April is the time for gathering roses; nearly every sort of corn is cut down and sown at the same time; spelt and wheat are ripe, as well as the greater part of the leguminous crops; and the Alexandrian trefoil yields a second crop. During May the reaping of the winter crops continues; *casia fistula* and hennah are in flower; the early fruits, as grapes, figs, carobs, and dates, are gathered. In June, Upper Egypt has its sugar-cane harvest; and the plants on the sandy grounds begin to wither and die. In July, rice, maize, and canes are planted; flax and cotton are pulled; ripe grapes are abundant at Cairo; and there is now a third crop of trefoil. In August the nenuphar and the jessamine flower; the palm-trees and the vines are loaded with ripe fruit; and the melons are surcharged with water. Towards the end of September, oranges, citrons, tamarinds, and olives are gathered, and a second crop of rice is cut down. In this month also, and still more in October, all sorts of grain and leguminous seeds are sown; the grass grows tall enough to hide the cattle; and the acacias and other thorny shrubs are covered with odoriferous flowers. The sowing continues more or less late in November, and before the end of the month the corn begins to spring; narcissuses, violets, and colocasias flower on the dried lands; the nenuphar disappears from the surface of the waters; dates and the sebestan fruit are gathered. In December the trees gradually lose their leaves; but the corn, the grass, and the flowers every where present the spectacle of a new spring.

ANIMALS. — The animal kingdom of Egypt will not detain us long. The want of meadows prevents the multiplication of cattle; which must also be kept in stables during the inundation. Asses, mules, and camels appear in full perfection; the asses, in particular, are fine animals, and so sprightly, that this animal serves as an object of comparison for a person in high spirits. There are great numbers of buffaloes; the Mamelukes used to keep a beautiful race of saddle horses, and great attention is still paid to this noble animal by the Pasha, for the mounting of his cavalry. In Lower Egypt there are sheep of the Barbary breed. Large beasts of prey find neither food nor cover; and hence, though the jackal and the hyena are common, the lion is but rarely seen. Crocodiles seem to be banished from the Delta, but are still met with in the higher parts of Upper Egypt. The ichneumon still exists, and has never been found any where else. Jerboas, hares, foxes, hedge-hogs, bats, and rats, are also found. The birds do not differ much from those of Europe; the famous ibis, according to Cuvier, is a sort of curlew, now called Abou-hannes. The Nile is said to contain some singular species of fish. The *coluber-haje*, an animal employed in the hieroglyphics as the emblem of Divine Providence; and the *coluber-vipera*, the true viper of the ancients, are still found. The animal kingdom likewise supplies vermin which very much detract from the comfort which might otherwise be derived from the genial climate of Egypt. In spring, summer, and autumn, flies are so abundant as to be extremely annoying during the day-time; musquitoes are troublesome at night, and sometimes even in the day; and every house which contains much wood-work (as most of the houses of the best class do) swarms with bugs during the warm weather. Lice are not always to be avoided in any season, but they are easily got rid of; in the cooler weather fleas are excessively numerous. —(*Lane's Account of the Manners and Customs of the Modern Egyptians*, I. 3.)

PEOPLE. — The inhabitants of Egypt may be classed as Arabs, Copts, Turks, Jews, Greeks, Armenians, Franks, and other foreigners. The *Arabs* form the great body of the people. They are characterised by an oval face, darkish skin; forehead of moderate size, seldom high, but generally prominent; small, deep-sunk, but sparkling eyes; an expressive physiognomy; a general angularity of form; short pointed beards; their lips habitually open, and shewing their teeth; muscular arms; the whole body more remarkable for agility than beauty, and more nervous than handsome. In general the Egyptian Arabs attain the height of about five feet eight, or five feet nine inches. In mature age most of them are remarkably well proportioned; the men

are muscular and robust; the women very beautifully formed and plump; and ne sex is too fat. In Cairo, and throughout the northern provinces, those who not been much exposed to the sun, have a yellowish but very clear complexion, a soft skin; the rest are considerably darker and coarser. The people of Middle E are of a more tawny colour, and those of the more southern provinces are of a bronze or brown complexion, being darkest towards Nubia, where the climate is test.—*Lane*, I. 31. The peasantry, called *felluhs*, seem to have been all cast i same mould. They are every where attached to the soil; their wretched cot exceed in filth and meanness the cabins of the Irish; and the inhabitants are g rally covered with rags. A few earthen pots, a large jar for grain, and a mat to on, constitute the whole of their furniture; their ordinary food is durrah-bread onions; a few eggs, or a coarse piece of buffalo-flesh is regarded as a feast. As poverty deprives them of all pretensions to free agency, they are universally crin timid, and dissimulating. Fear is their habitual passion. Credulous, ignorant, perstitious, no man has originality enough to be a heretic. In religion, morals, ners, and opinions, the son follows in the footsteps of his father without inqui reflection. The fellah marries and begets children, who run naked about the vil till the age of puberty; he then gives them a rag to bind about their loins; they begin to work, become possessed of a few piastres, and, marrying in their run the same career as their parents. Incapable of forming any conception o higher affections, their love is purely physical, women being simply in their eyes cessary of life like rice or durrah. Both sexes are highly profligate. Few A ever perform a journey to any large city without visiting the dancing girls, w numbers are so considerable, that the tax which they pay forms a considerable in the Pasha's revenue. Their wives, on the other hand, if left for a short tim their own guidance, easily forget their fidelity. Both in town and country the E tian Arabs are scrupulous observers of the external rites of their religion; but, th immersed in superstition, they are as generally lax in faith as in practical mor At Cairo, as in other capital cities, the inhabitants being engaged in a greater va of occupations, obliged to exercise a higher degree of ingenuity, and brought into quent contact with strangers, display more sociability and politeness than the fell and the artizans and shopkeepers are distinguished for their industry and attentio business. But, when not engaged in their professional or religious duties, the generally found in the coffee-houses, listening to the story-tellers, or in the p places, where mountebanks, jugglers, and dancing girls are performing. The pro tive powers of the human race in the valley of the Nile are very great; and w for some years, there has been no call for conscripts, the towns and villages crowded with children. The disproportion of males to females is also very gr so much, according to the Government returns, as 100 to 135, and polygam doubt assists in filling up the vacancies occasioned by the perpetual drafts of y men. In a very few years, were the country in a state of rest, the population w double itself, so easily is life supported, and so constant is the demand for labour. universal is early marriage, and so prolific is the Egyptian race, that a young wo is seldom seen without a child on her shoulders. The rate of mortality, how is also great, though it appears to be diminishing; and the prejudices of the fel against vaccination are gradually subsiding.

The *Copts* are said to amount to 150,000, of which number 10,000 are foun Cairo. In some parts of Upper Egypt are villages exclusively inhabited by th and they particularly abound in the Faioum. They are distinguished from the A by a darker complexion, flat foreheads, and hair partaking of the woolly charac eyes large, and raised at the angles; high cheeks; short, though not flat, noses; mouths at a distance from the nose, and rather thick lips; thin beards; a wan gracefulness in their shape; bandy legs, ill adapted for agility; and long flat to

* This description is taken from Malte Brun's Geography, but Mr. Lane's account does not ex agree with it. "The Copts," he says, "differ but little from the generality of their Mooslim c trymen; the latter being chiefly descended from Arabs and from Copts, who have embraced the of the Arabs, and have thus become assimilated to the Copts in features. I find it difficult, s times, to perceive any difference between a Copt and a Mooslim Egyptian beyond a certain dow and sullen expression of countenance which generally marks the former; and the Mooslims th selves are often deceived when they see a Copt in a white turban. We observe in the latter the shades of complexion, in different latitudes of the country, as in the former, varying from a yellowish colour to a deep bronze or brown. The eyes of the Copt are generally large and elong slightly inclining from the nose upwards, and always black; the nose is strait [straight?] excepti the end, where it is rounded and wide; the lips are rather thick; and the hair is black and curly. Copts are, generally speaking, somewhat under the middle size; and so, as it appears from mummies, were the ancient Egyptians." "The people who bear the greatest resemblance at pr to the ancient Egyptians are the Noobehs (or genuine Nubians); and next to these the Abyssi and the Copts, who are, notwithstanding, much unlike each other."—II. 399, 10.

Several centuries ago the Copts still retained their ancient language, which is yet employed by them in their religious worship; but in common use it is now completely superseded by the Arabic dialect of the country. In the villages, and throughout the country, the Copts are devoted, like the fellahs, to agriculture, though many of them follow trades. At Siout, for example, they are weavers; in Faioum, distillers of rose-water; at Menouf, mat-makers; and in Cairo, goldsmiths, tailors, masons, or cabinetmakers. Under the Mamelukes, when they were the only educated class in the country, they were employed as tax-gatherers and financiers; but they are now reduced to mere clerks. Bigotedly tenacious of their ancient customs, their women pass their lives in extreme retirement, and never appear unveiled, even before their nearest relations. As among other barbarians, the condition of the women is degraded and servile; but the mother of many children is held in higher esteem than she who is barren. Under all circumstances, however, the husband and the wife neither eat nor sit together, and live in a state of estrangement. Girls from ten to twelve years old wear a white veil, and are often married before the age of puberty; married women are distinguished by a black veil, which is ominous of their melancholy state of servitude. Severe in external observances, the Copts are no less lax in their morals than their Arab or Turkish neighbours. Adultery is common; and a kind of temporary marriage is likewise practised, which differs but little from female prostitution. The Copts are undoubtedly descendants of the ancient Egyptians, but are not an unmixed race; their ancestors, in the earlier ages of Christianity, having intermarried with Greeks, Nubians, Abyssinians, and other foreigners.—(*Lane*, II. 309.)

The *Turks* are the ruling class, and do not differ essentially in person, character, or manners from their brethren in Asia. Many of them, however, are now, comparatively speaking, highly accomplished in literature and science; but they all exhibit the same laxity of morals, and the same want of right principle, which every where characterises the people of the East. The splendid *Mamelukes*, who so lately ruled and tyrannized over Egypt, are completely extirpated.

The *Jews* are now fewer in number than formerly, and do not exceed 3000 at Cairo, and 500 at Alexandria. In their persons they are dirty, covered over with sores and scabs, and have watering eyes, all of which is the effect of the filthiness in which they are born and live.—(*Webster's Travels*, II. 207.) Like the rest of the inhabitants, they are generally reduced to poverty; none indeed are rich, and but few possess even a competency. The exceptions which occur are found at Alexandria. The Jews are now exempted from persecution; are hampered by no civil disability; and are allowed to purchase lands and houses no less than the Mussulmans. Poverty, however, confines them, at Cairo, to the worst quarter of the city, where they live in streets as filthy as can well be conceived, in which the plague commonly makes its first appearance, and commits its most fearful ravages. Their character exhibits in Egypt the same peculiarities as elsewhere: they are averse to all useful productive labour, and therefore seldom exercise any other trade than that of bankers or money changers, jewellers or petty traffickers, and are never found as labourers or husbandmen. At Alexandria, however, they lately monopolised the trade of butchers.—(*St. John*, II. 385.)

The *Franks* in Egypt consist principally of French, English, Germans, Italians, and Poles. Many of them are engaged in trade, and live, in a great measure, according to the customs of their respective countries; not a few are employed in the military and civil service of the Pasha, where some of them have attained the high rank of begh or bey, *i. e.* lord. Other foreigners from all parts of Western Asia and Northern Africa are likewise to be found in Cairo; but they form too inconsiderable a part of the population to require particular notice. The inhabitants of the deserts are Bedwin Arabs of various tribes, of whom the principal are the *Beni-Wassel* in the northern, and the *Ababde* in the southern portions of the eastern desert. They profess to be independent of the Pasha.

The numbers of the several classes of which the population of Egypt is mainly composed are nearly as follow:—

Arab Moslems,	1,750,000
Copts,	150,000
Turks,	10,000
Syrians,	5,000
Greeks,	5,000
Armenians,	2,000
Jews,	5,000
Total,	1,927,000

of the remainder, namely Arabians, Moghrebins, Nubians, Negroes, white Franks, &c. amounting altogether to about 70,000, the respective numbers a uncertain and variable. The Arabs of the deserts ought not to be included population of Egypt.

GOVERNMENT. — The government of Egypt is at present a monarchical des vested in the person of Mohammed Ali, a Turkish Pasha, who, though he ac ledges the supremacy of the Sultan, is nevertheless quite independent, and is t sovereign of the country, which he has, within a few years, raised to a high r a military power. Under the Pasha, the government of Upper Egypt is admini by a kiaya bey, and each sub-province has its *mamoor* or sheriff; under the ma are nazers, or inspectors of districts, whose jurisdiction extends over seven c or kashefs, governors of towns and their environs; and under each of these are seven or eight kaymakams, according to the number of villages in the di The duty of these last officers is to superintend the cultivation of the lands, collect the taxes, assisted by the shekh-beled, or native chief of each village is subordinate to the Turkish officers. A superintendent or nazer-shekh also looks the shekh-beled, under the immediate orders of the kashef; whil mobasher, a Christian inspector, appoints the numerous Copt scribes, and c their accounts. These officers are all paid from the government treasury; a only person who has a direct and legal claim on the fellah is the shekh- who exacts the twenty-fifth part of the produce, with presents of every kind, a ing to the means, or the fears, of the donor. But, besides these legal demand fellahs are subjected to the most ruinous extortion, amounting almost to robbe the part of the inferior governors; against whose exactions they can obtain dress without such presents to the higher officers as are quite beyond their In the neighbourhood of Cairo, where they have the fear of the Pasha before eyes, these functionaries are tolerably well behaved; but, in the more distant vinces of Upper Egypt, they carry their spoliation and tyranny to great excess. the consequence is, that the fellahs, robbed of their property, and of the prod their labours, are kept in the most miserable poverty, and deprived of all encou ment to improve their lands. Trees are seldom or never reared, or, if some fe planted in the vicinity of the large towns, no inducement is held out to atte their culture, and the despondent fellah wilfully neglects them, to avoid the tional tax.

The power of the Pasha is maintained by means of a large standing army, d lined in the European manner by European (chiefly French and Italian) officers which, in his wars with his master, the Sultan, proved a most efficient instru It is composed of all classes of his subjects, even from the most remote provin Nubia and Sennaar. Not content with his superiority by land, he has also equip numerous and powerful fleet, to preserve his communications with Candia an coasts of Syria, which were for several years part of his dominions. He has lik established a number of schools and colleges, which promise eventually to civilization among his people; he gives every encouragement to active and intel foreigners to settle in Egypt; and has even sent many of the more promising y to be educated in France, from which some of them have already returned accomplished in literature and science. But the necessities of his situation made him a hard taskmaster; he has rather *forced* than *fostered* the indus the nation; he has had recourse to monopolies for the purpose of supplying his niary wants; and he has shown himself, in other respects, only half informed the best means of governing a kingdom, and improving the condition of its p He has nevertheless effected wonders; and experience, perhaps, will point out t and his presumptive successor the best methods of attaining the object which seem to have in view, the possession of a rich and powerful kingdom. Moha Ali, perhaps the most extraordinary political adventurer that the modern Eas produced, is a native of Cavalla in Albania, and came to Egypt with the Tu army in 1801, in the capacity of bim-bashee, or colonel. By daring and intrig contrived to get possession of the vice-royalty, and confirmed himself in it b massacre of the principal Mameluke beghs, and the exile of the others who es with their lives. Subsequently, the Sultan is said to have made repeated attemp get rid of his too powerful subject by secret means, but these were always foiled b wary Pasha. At last their mutual jealousy led to an open war, in the course of w the Egyptian army proved more than a match for the imperial troops, defeating in three great battles, driving them out of Syria, and through Asia-Minor, almo the neighbourhood of Constantinople. This war, which broke out in 1830, wa

minated the following year by a peace, which left the Pasha master of Syria and Adana in addition to his former possessions; but, in 1840, he was compelled, by the operations of the British forces, in conjunction with those of the Sultan, to abandon Syria; and the European powers have since agreed to secure to him and his family the hereditary possession of Egypt and its dependencies, under the supremacy of the Court of Constantinople.

The Pasha is the great landholder of the kingdom, and his revenues consist principally of the land-rents, which are levied in proportion to the three qualities of land; the best paying from 40 to 30 or 20 real; the middling, from 18 to 14; and the lowest, from 12 to 8, each feddan; but the tax on the same land varies in proportion to the rise of the Nile, the islands generally paying 20 even after a low inundation.* Each fruit tree pays one piastre, equal to threepence sterling; and the use of the water wheels is also paid for by the fellahs. But so wretched is the system of agriculture, that this rent, enormously increased, indeed, as it is by the illegal exactions of the collectors and superintendents, keeps the fellahs in a state of the most abject and hopeless poverty; so much so, that in order to eke out their scanty means of subsistence, they are sometimes obliged to steal their own corn. As the Pasha publishes no accounts, the amount of his revenue is unknown, but it has been variously estimated by European travellers and residents at 25,000,000 of dollars; £2,100,000 sterling; and even from £2,500,000 to £3,000,000. About the end of 1839 the actual force of the Egyptian army was 159,300 men, of which 112,800 were infantry, 13,180 cavalry; 25,820 artillery; 5000 Bedwins, 1000 Albanians, 1500 Moghrebins and other irregulars. The number of ships of war was 10; 1 of 3 decks and 136 guns, 1 on the stocks, and 2 fitting out, 6 frigates, 4 corvettes, and 8 brigs. The management of the army is vested absolutely in the minister of war, assisted by a council, of which he is president, and which decides on all contracts for the supply of arms, accoutrements, and materials of war. The general of artillery has the direction and control of the arsenals, cannon foundries, gunpowder and salt-petre works, of the printing establishments and cloth manufactories, all of which are within the department of the minister of war. The *Nazers* receive their orders direct from the general of artillery, with whom they are in constant correspondence. They are the chiefs or directors of the various works, manufactories, and departments, and are themselves members of the council, which consists of 20, and meets every day for the despatch of business. Under them are the Moudyers or governors of departments, of whom there are 2 for Upper, 1 for Middle, and 4 for Lower Egypt. Their sub-delegates are the Mamoors, whose duty it is to see the contributions punctually paid; the canals, bridges, and dykes kept in proper order, and to superintend the manufacturing establishments. They are also expressly instructed to see vaccination enforced, and the rigid execution of orders for the levy of troops and workmen. The office used to be held by Turks, but is now also filled by natives, mostly fellahs. In the chief towns the general police is under the charge of the Bache Aga; the markets are superintended by the Mohteceb or Aga of provisions; and both officers give a daily report to the Kiahice or governor of the place, and receive his orders. In each quarter of the town is an officer, Sheikh-el-tumn, who acts as a sort of justice of peace, or commissioner of police. The citadel contains a spacious arsenal, where 900 workmen are employed in manufacturing muskets and other military necessaries. The cannon foundry employs 1500 men; and the consumption of iron and fuel is immense. There is also a musket work at Hod-el-Marsoud.

The administration of justice is more prompt and less capricious in Egypt than in most Mahometan countries. Publicity usually accompanies the proceedings of all the courts, whose decisions are generally just, though often rude and precipitate. The highest court is the Mekermeh, which exercises a sort of religious jurisdiction. It is the tribunal of final appeal, and its law is the Koran; but a code so vague, and so little suited to modern society, necessarily leaves great latitude for judicial decisions. The Mussulman reverence for the Koran is so devoted, that any sentence which can find a justification or a sanction in the phraseology of the sacred volume, is submitted to with the greatest reverence by the suitors. Indeed, their respect for all its dogmas is so unlimited, that it would be scarcely possible to introduce a philosophical system of jurisprudence in the East, unless it could be connected in some way or other with the doctrines of the Prophet. Another great difficulty would

* *Wilkinson's Topography of Thebes, &c.*, 268. A feddan is nearly 1 English acre; a *real* is 90 paras, or 6½d. sterling; so that, *in English*, the preceding statement will read thus:—The best land pays from 20 to 15 or 10 shillings the acre; the middling, from 9 to 7 shillings; and the lowest from 6 to 4 shillings.

meet the legislator at the threshold, namely, the complete exclusion of a great of the community from the operation of the laws; there is no power to pene into the Harem, and whatever misdeeds are practised there, neither police, laws, nor public opinion can reach. The very organization of society thus stan the way of justice. The Mekermeh is also the court for the registration of lands other real property, and no legal transfer can take place without its authorit (*Bowring*, p. 121.)

Productive Industry.—The agriculture of Egypt is in a very low condition; tellahs or peasants are in a state of wretchedness: they have neither proper im ments nor the means of improving their situation: for the rapacity of the governm deprives them of all the fruit of their exertions. But the productive powe the soil are incalculable; wherever water is spread there springs up a rapid beautiful vegetation; the seed is sown and watered, and scarcely any other ca required for the ordinary produce. Even in spots near the desert, which seem consist merely of sand, irrigation brings rapidly forth a variety of green herbs plants; and accordingly the most important branch of agriculture in Egypt, and which requires the chief consideration, is irrigation. The Pasha informed Dr. B ring that he had introduced not less than 38,000 sakias or machines for raising wa Wherever there is water there is fertility; and all the plants grown in summer raised by means of artificial irrigation in places beyond the reach of the inundat In fact, says Dr. Bowring, were there hands to plough, and water to irrigate, not easy to calculate what an immense tract of territory might be rescued f waste. Still, to counterbalance, as it were, the productive powers of the soil, e difficulties peculiar to eastern regions present themselves in Egypt. The hot w often destroy the hopes of the husbandman; and there are seasons in which khamseen winds dry up whole districts, even after irrigation. In addition to this, prospect of large and productive harvests is at times suddenly cut off by the vi tions of locusts, which come in myriads, like an all-destroying plague, followed multitudes of hawks and other birds, filling the air for a vast space, and then ascending on the fields of corn, which they completely lay waste, and then wing t way to another spot. Egypt is calculated to contain 3,000,000 feddans of cultivat soil; but of that quantity only 2,000,000 are cultivated, when the Nile rises from to 24 cubits; and when it does not rise above 19, the inundation is not permar enough to produce the desired effect. In the distribution of agricultural pro tions, the government generally assumes the initiative, by determining what quan of a particular article shall be cultivated in a given district, and at a price fi upon before the period of delivery. By this arrangement most of the produc the land comes into the hands of the government on terms fixed by itself; and, fact, the government considering itself as possessed of the fee-simple of the lands, gards the fellahs as labourers under its direction, who may, and who frequently abandon the lands, whenever the conditions of cultivation are not satisfactory them. When the fellah is poor the government prices scarcely enable him to ex but when the holder of the lands has capital for seed, and can afford to wait for returns, he may have from 15 to 20 per cent. profit on his outlay. In bad years government supplies the fellahs with seed; which must be repaid with inter after the harvest. The principal articles of produce are wheat, beans, lentils, b ley, maize, durrah, chick peas, lupins, helbeh a seed of a bitterish taste, wh flour is mixed with durrah by the fellahs, sugar, cotton, flax, indigo, saffron, bacco, henna, silk, opium, and linseed. But of all these cotton is incompara the most important, and is an article the introduction of which is wholly due to Pasha. The average produce may be said to fluctuate from 100,000 to 150,0 bales, each about two hundred weight, and the price varies from 8 dollars to per quintal. But the fellahs are very unwilling to engage in its cultivation; they are pillaged most unmercifully by the government officers, and the price lowed affords no profit; cotton, besides, produces only one crop a-year, while m other articles yield two or three harvests. Raw silk is also an object of s attention, and is likely to become more so; great numbers of mulberry trees h been planted, and the cultivation is still extending; the quantity produced is yet equal to the demand in Egypt, and considerable quantities are therefore import —(*Bowring's Report on Egypt and Candia*, 1840.

Education.—A general system of education has been established, consisting primary, secondary, and special schools, through the whole of which pupils are co pelled to pass. Primary schools are to be spread in the provinces according to the

pulation, to the extent of embracing altogether 5500 scholars, and are all to be conducted on the same system; each school is to be under the charge of a director and two teachers. The scholars are admitted from the age of 7 to 12, and receive instruction for three years, during which time they are taught to read and write Arabic, the first rules of arithmetic, and religious knowledge; and are also fed, lodged, and clothed. The secondary schools receive their pupils from the primary schools, for the purpose of fitting them for the special schools. Their course of instruction lasts four years, but may be extended to five, and embraces the Arabic, Turkish, and Persian languages; with arithmetic, elementary algebra, elementary geography, general history, general geography, penmanship, lineary design, and drawing. Each school has one director, one sub-director, three prefects of study, twelve masters, twelve professors of Arabic, Turkish, and Persian, one professor of history, one of geography, three drawing masters, two *sulus* and two *rika* professors; the courses of study are arranged by the council of public instruction. The schools are subjected to military discipline, and the scholars are lodged in barracks; they form three battalions, each consisting of four companies, and each company of 125 scholars. There is one preparatory school at Cairo for 1500 pupils, and one at Alexandria for 500. The special schools are for effecting translations from Turkish, Arabic, and French. The polytechnic school for providing officers for the artillery, engineers, department of roads and bridges, mines, and other services, is formed on the model of that of Paris; it was established in 1834, and in 1839 contained 225 pupils. Those who finish their courses of study satisfactorily obtain the rank of sub-lieutenants; those who are rejected become non-commissioned officers. There are besides a cavalry school, an infantry school, a medical school, and a veterinary school. The whole system of education is under the superintendence of a council of public instruction, which is charged not only with a general superintendence, but with the inspection in detail of all the schools; with the nomination of teachers for the approval of the minister; the appointment of all subordinate functionaries; the punitory and retributive regulations of the schools, and with all the correspondence connected with the business of instruction. The system is wholly compulsory; a certain number of children from each district is required to be sent to the public schools, where they are maintained as well as educated; and on this account parents are generally willing to send them; though in many cases much repugnance is felt lest the children should be detained as soldiers. These schools are no doubt an improvement on those which preceded them; but are far inferior to the well-organised seminaries of Europe; they labour under a great want of qualified teachers and class-books. The whole system, indeed, seems to have been formed more from a desire to introduce superior education for the few, than general instruction for the many; and to be wholly unsuited to a people just emerging from ignorance and barbarism. But there are many prejudices to be overcome, and the little which has been done, imperfect as it is, is highly meritorious. Among Mussulmans, reading has been considered of little value, further than as it enabled them to become acquainted with their sacred books; and the spirit of the Caliph Omar is still prevalent among the ulema (the learned), from whose lips is sometimes heard language similar to that recorded of the Saracen conqueror. "The koran," they say, "contains everything, and all that is out of the koran is worthless." As Europeans have been the principal instruments in diffusing education in Egypt, serious difficulties have also arisen from the different habits of thought and feeling between Moslems and Christians, the diversity of their mental training, the variety of their idioms, the embarrassments which European knowledge meets with at every step in the pursuit of synonymous words or phrases in Turkish and Arabic, and the prejudices, domestic, social, and religious, of the natives. It must also be added, that among the Europeans themselves too few have been trained by proper education at home to become instructors and directors of instruction abroad.—(*Bowring's Report*, p. 125–140.)

MANUFACTURES and TRADE.—Not content with improving and extending the cultivation of the soil, and increasing the amount of its produce, the Pasha has also endeavoured to enrich himself by the introduction of manufactures. He has erected at great expense mills and machinery for spinning and weaving cotton, and preparing various other articles; but, owing to various causes, and principally to the indolence, inattention, incapacity, and want of personal interest, on the part of the persons employed, his speculations have proved an almost total failure, though they are still perseveringly carried on. He has made himself at once the great landholder, manufacturer, merchant, and general monopolist of the trade of the country; everything is done at his instigation, and for his profit. No one else has any interest in what is done, and consequently everything is ill done; and were he out of the way, all his manufacturing

projects will probably fall to the ground. The trade of Egypt consists chiefly in the export of her raw produce, particularly cotton, and of the articles brought from the interior by the caravans; but the principal article is Negro and Abyssinian slaves, who are brought in great numbers to the slave-markets of Egypt, from which all the neighbouring provinces of the Turkish empire are supplied. The principal articles of import at Alexandria are wood, tarboushes, nails, spices, iron, pitch, cloth, cochineal, paper, and lead; but the extreme poverty of the people, and the circumstance of the great mass of them wearing scarcely any clothes at all, are such obstacles to the extension of the import trade, as only a complete change in the method of regulating their industry, and rewarding their labour, will remove.

Public Works. — The number of the Pasha's works of this kind is considerable, and comprehends establishments of every kind, as arsenals, manufactories, foundries, workshops, schools, hospitals, mosques, palaces, barracks, canals, locks, terracings, drainings, telegraphs, stables, sheepfolds, &c. But one of the greatest works he has contemplated, is the barring up of the waters of the Nile by a huge dam with sluices, near the fork of the Delta. The original suggestion emanated from the scientific men of the French expedition; and Bonaparte is said to have expressed a favourable opinion of it. M. Linant, who has had the direction of the work, estimates that it will, if completed, irrigate 4,275,000 acres, even in the lowest inundations, and without the aid of machines; and that with machines a very large additional number of acres may be supplied with water, to the distance of eight leagues (20 miles) above the barrage. He represents that it will meliorate the canal navigation, improve both the Damietta and Rosetta branches of the Nile, give to the Mahmudiah Canal sufficient water for the largest vessels to pass between it and the river, will, at a small charge, enable the Government to make the canal of Suez navigable, and will supply the Kalish of Cairo sufficiently all the year round. He objects to the present system of irrigation, that the canals do not raise the level of the water, while every year they become more and more filled with mud, and convey a smaller quantity of water; and shews, that in the uncertainty of the inundations no calculation can be made of the probable agricultural produce of the country. He estimates that the work will require five years for its completion, and that the expense will be about a million and a half sterling. On this report, orders were given for commencing the stupendous work; but it seems to have been begun without sufficient consideration, and, after a large expenditure, has been again abandoned, or deferred. Immense masses of materials have been collected; a railway has been formed to connect the Nile with the quarries of the Mokattam behind Cairo; arrangements were also made for the supply of a large quantity of timber from the forests near Scanderoon; a large body of workmen were collected; and about £170,000 were expended in the first operations; but all is at present suspended; and it is probable that the scheme will be superseded by the introduction of less expensive hydraulic machinery. The opinion is gaining ground that the barrage would neither be the safest, nor the least expensive plan of irrigation.—(*Bowring's Report*, p. 60.) Besides the great Mahmudiah Canal, from the Nile to Alexandria, which serves the double purpose of navigation and irrigation, many other canals have been recently constructed. In the Delta is the canal of Tantah, 54,000 yards long, and four wide, which preserves its waters throughout the year; the canal of Bonhych, 62,000 yards long, and four wide, on the Damietta branch; and that of Bahyreh, on the Rosetta branch, 104,000 yards long, and five wide. The Pasha has also constructed 38,000 machines for raising water, making the total number in Lower Egypt now exceed 50,000.—(*Ib.* 14.)

Internal Communication. — The Mahmudiah Canal and the Nile are the most active, and indeed the only channels of communication for the principal markets of Egypt. From the smallest cangias to the largest maashes, from boats of four or five tons to vessels of 120 tons burden, there is a perpetual activity on these two main arteries of trade. Boulak, the port of Cairo, and Atfieh, where the canal joins the Nile, are the principal places of shipment and landing. The cost of transit is subject to many fluctuations. The largest boats, or maashes, are only employed during the period of high inundation, and convey from Upper Egypt wheat, barley, and pulse. The navigation of the Nile employs a great number of the natives, who are generally strong muscular men. They undergo severe labour in rowing, pulling, and towing; but are very cheerful. In consequence of the continual changes which take place in the bed of the river, the most experienced pilot is liable frequently to run his vessel aground; and, on such occasions, it is necessary for the crew to leap into the water to shove off their boat with their back and shoulders. On this account, also, the boats are generally made to draw more water

at the head than at the stern; and hence the rudder is necessarily very wide. The better kind of boats, which are very numerous, are of a simple but elegant form, generally between thirty and forty feet in length, with two masts, two large triangular sails, and a cabin next the stern, usually about four feet high, and occupying about a fourth or a third of the length of the boat; and in most of them the cabin is divided into two or more apartments. Sudden whirlwinds and squalls being very common, a boatman is usually employed to hold the sheet in his hand, so that he may let it fly at a moment's notice. The number of boats on the river is about 4500. There are also large vessels, called jerms, which sail between Alexandria and Rosetta, and are also employed in conveying merchandise from Damietta to the outside of the mouth of the river, to be thence shipped in vessels lying out at sea. In summer, these jerms even go as far as Cyprus and Syria, but they are often lost. The ordinary mode of travelling and conveying goods through the deserts, which border on all sides the cultivated land of Egypt, is by means of camels along unformed paths. The journey between Cairo and Suez, a distance of 80 miles, can be accomplished in two, or at most three days, without inconvenience; and three stations have recently been formed on the road for the accommodation of travellers. Sometimes travellers prefer to cross the desert between Cosseir on the Red Sea, and Kenneh on the Nile; and, to accommodate them, four wells have been put in good order by the Pasha. Ladies perform the journey in tachtruans, a sort of palanquins carried by camels. A project has been long in contemplation for a railway between Cairo and Suez. The engineering difficulties are not many, for, with the exception of a few miles of sand, immediately on leaving Cairo, and a short distance similarly inconvenient near Suez, there is a hard, stony, and level foundation throughout the line; but, as the quantity of goods, and the number of travellers, could not furnish anything like an adequate return for the outlay, the project has been postponed, if not abandoned. There is a daily post between Cairo and Alexandria, which conveys letters in from 30 to 36 hours, but takes only Government despatches, and such private communications as the Government permits. The merchants of Alexandria, however, have a post of their own, which communicates three times a-week with Cairo, and delivers letters on the fourth day. A line of telegraphs has also been established between the two cities, by which communications are frequently made. It is not often interrupted by fogs, and news are conveyed by it several times a-day in case of need. A regular post is established by Government for communication with all its officers, from the one end of Egypt to the other; but, on especial occasions, messengers are dispatched on dromedaries, which travel at the rate of seven or eight miles an hour; and sometimes letters are sent by messengers on foot.—(*Bowring's Report*, 72.)

DIVISIONS.

I. LOWER EGYPT or BAHARI.

Provinces.	*Cities and Towns.*
CAIRO,	CAIRO, Boulak, Fostat, Torrah, Suez.
KELYOUB,	Kelyoub, Shoubra, El-Khancah, Abou-zabel, Shybyn-el-Canter, Matareyeh, Atryb.
BELBEYS,	Belbeys.
SHIBEH,	Shibeh, Tel-bastan, Hehydeh.
MIT-CAMAR,	Mit-Camar.
MANSOURAH,	Mansourah, Tmay-el-emdid.
DAMIETTA,	Damietta, Menzaleh, Farescour, San, Tennys, Tyneh or Thineh, El-Arish.
MENHALLET-EL-KEBIR,	Menhallet-el-kebir, Semenhoud, Abousir, Bahbeyt, Koumzalat.
TANTAH,	Tantah, Zefti.
MELYG,	Melyg, Shybyn-el-kûm.
MENOUF,	Menouf.
NEGYLEH,	Negyleh, Terraneh, Omm-dynar, Wardan.
FOUAH,	Fouah, Rashid or Rosetta, Deirout, Berenbal, Sa-el-hajar.
DAMANHOUR,	Damanhour, Rahmanieh, Kourat.
ALEXANDRIA,	Iskanderyeh (Alexandria), Aboukir, El Keyt.

II. VOSTANI and SAID, or MIDDLE and UPPER EGYPT.

JIZEH, or JYZEH, or GEEZA,	Jyzeh, Bedresheyn, Mitrahineh, Sakkara, Dashour, Abousir.
ATFIEH,	Atfieh.
BENISOUEF,	Benisouef, Bousb, Feshn, Abû-jirjeh, Behneseh, Samallout, Ahnas.
FAIOUM,	Medinet-el-Faioum, Begyg.
MINIEH,	Minieh-ibn-khasim, Meflaoui-el-arish, Beni-hassan, Sheikh-Abadeh, El-Tell, Darout-el-Sherif, Ashmounein.
MONFALOUT,	Monfalout, El-Cousieh, Sanabou.
SIOUT,	Siout, Aboulig, Sadfeh, Tahtah.
GIRJEH,	Girgeh or Jirjeh, Mensheit-el-nede, Hon, Akhmim, Kau, Madfouneh, Denderah.
KENNEH,	Kenneh, Cous, Keft, Erment, Karnac, Luxor, Gournah, Medinet-Abou, Cosseir.
ESNEH,	Esneh, Edfou, Assouan, Koum-Ombos, El-kab, El-Sag, El-helf, Selseleh,

CITIES AND TOWNS.—KAHEIRAH, or QAHEIRAH, or MISR-EL-KAHEIRAH (the GRAND CAIRO of the Franks), the capital of Egypt, and the largest city of Africa, is situate on a sandy plain about half a mile from the east bank of the Nile, in 30° north lat., and 31° 18′ east long., about 25 miles above the point of the Delta. Cairo, seen at a distance on the west side, is beautiful, and appears truly worthy to be the metropolis of Egypt. Skirted by groves and gardens, its light airy structures seem to be based on a mass of verdure; long lines of buildings, of gaudy appearance, and infinitely varied in form, rise behind each other; and the palace and the citadel, cresting a steep projection of the Mokattam ridge, lead the eye of the traveller, as he approaches from the Nile, to that vast rocky barrier, which protects the city from the desert blasts, and which, differing in this respect from all other hills, appears red at a distance, even where its tops seem to blend with the sky. Viewed on the other side, from the citadel, Cairo appears a large crowded city, with grey, flat-roofed houses, and 130 minarets of mosques peering above the houses and the trees. The city is in form nearly a parallelogram, about two miles in length, by one in breadth, surrounded with stone walls, which are pierced with a number of fine gates; and a canal runs through the centre of the city, which is filled with water during the inundation, but with green mud, emitting pestilential vapour, in the low season. The streets are narrow, winding, and unpaved; some of them are indeed so narrow that two persons may shake hands from the projecting windows of the upper stories. The city is divided into 53 districts or wards, called *harah*, several of which are distinguished by their peculiar population; as the Jewish, the Coptic, the Greek, and the Frank quarter. There are, however, several large open areas, as the *Kara-m-eidan*, the *Roumelieh*, the *Birket-el-fil*, and *El-Ezbekyeh*; the last two of which are covered with water during the inundation of the Nile. Surrounded with houses, they present sometimes a magnificent spectacle. The houses are built of earth or bricks; most of them have two or three storeys; but, having their windows opening upon interior courts, their outside presents to the street the appearance of so many prisons. The houses of the higher public functionaries, civil and religious, are distinguished by their greater size, their less faulty construction, and more ornamental appearance. A multitude of mosques, some of them very elegant, covered with arabesques in fine taste, and adorned with rich and graceful minarets, give to the city an imposing and varied aspect. Four of these are particularly distinguished: that of *Touloun*, a vast work of the ninth century, considered to be the finest Arab monument in Egypt, though now half ruined; the mosque of *El-Hakim*; that of *El-Azhar* (Loub-el-Ozah), with a magnificent dome, and a college attached to it, where the most celebrated doctors of Islam are educated; and the mosque of *Sultan Hassan*, the most remarkable for the size and the height of its dome, and of its two minarets, for the variety of its marbles, and the arabesque ornaments wrought in hard stone, wood, and bronze. The citadel is situate on the east side of the city on a spur of the Mokattam, which overlooks it, and renders it incapable of defence. Part only of the old walls remain, the rest having been replaced by bastions and curtains in the European style; and, what is singular, the only portion regularly fortified is that least open to foreign aggression, the side facing the city. It contains a palace of the Pasha, which is a magnificent building, and a new mosque, which is the finest in Cairo. The celebrated hall of Joseph, a building supported on lofty and handsome columns, was removed in 1829 to make way for the new mosque; but Joseph's well still remains. It consists of two parts, the upper and the lower well, and a winding staircase leads to the bottom, a depth of about 260 feet. Both the well and the hall received their name from the Fatemite Khalif Youssef, and not from the patriarch Joseph, as has been sometimes alleged. The city is supposed to contain 36,000 inhabited houses, and about 250,000 people. There are 31 public baths, 1200 coffee-houses, and several fine bazaars. Without the walls, on the east side, are the tombs of the Mameluke kings, a dynasty of Circassians who reigned from 1382 to 1517, when Egypt was added to the Turkish empire by Sultan Selim. Attached to each is a handsome mosque, schools, and dwelling-houses; but they are now neglected, and are falling to ruin. Within a few years a good library has been formed in Cairo, by the subscriptions of English residents, and the greatest liberality is shewn in admitting strangers. Cairo was founded by Gober, a general of El Moez, the first of the Fatemite Khalifs of Egypt, who, having been sent in the year of the Hejra 358 (A. D. 969) with a powerful army to invade Egypt, and having succeeded in conquering the country, founded a new city under the name of *El-Kaheirah*, which, in 362, became the capital. About a mile from the city, in a fine park, is the splendid hospital and medical school of *Ceasar-eb-Ein*.

In the vicinity are *Foutat*, or Old Cairo, on the eastern bank of the Nile, three miles south; *Boulak*, on the same bank, north-west, the port of Cairo, containing a custom-house, bazaar, baths, printing-house, silk-manufactories, fine gardens, and about 18,000 inhabitants. It is now a large town, with handsome new buildings, chiefly in the European style. *Shoubra*, a small village, with a fine summer palace of the Pasha, on the river; *Abou-zabel*, where there is a large hospital or infirmary, capable of containing 1800 patients, and a school of medicine and surgery attended by about 300 pupils; *Jezeh*, or *Gyzeh*, or *Geeza*, or *Ghezeh*, on the left, or western bank of the Nile, a little below Foutat, a small but industrious town, regarded by some travellers as the most agreeable place in all Egypt. Gyzeh is the chief town of a prefecture or shire. Opposite to this town is the island of *Rhoda* or *Roudah*, covered with fine gardens, and containing at its southern point the famous *Nilometer*, which is a graduated pillar in a well, shewing the height of the annual inundation.

ALEXANDRIA, called by the Turks and Arabs ISKANDERYEH or ISKENDEREH, is situate at the north-west corner of Egypt, on the shore of the Mediterranean Sea, in 31° 13′ N. lat. 29° 53′ E. long. The modern town occupies a neck of land which joins the Island Pharos to the continent. At the beginning of the present century Alexandria was a miserable place, with narrow dirty streets, and a scanty population of about 7000. It is now the great naval station of the Pasha's fleet, and the emporium of the greatly extended European commerce with Egypt, and already contains a motley population of 60,000, composed of all descriptions of Africans, Asiatics, and Europeans, and has become a respectable, if not a handsome city. The island of Pharos, which the Arabs call *Roudah el Tyn, garden of fig-trees*, which extends east and west on the north side of the city, consists of a dry saline soil, and dazzling white calcareous rocks, and is bordered with reefs, especially on the west side. At its north-eastern extremity, is situate the castle, a large, square, lofty building, surmounted by a light-house in the shape of a minaret, occupying, probably, the site of the ancient Pharos, one of the seven wonders of the world. The castle has been strongly fortified by the Pasha, and occupies a small island joined to the larger one by an artificial dike formed in part of ancient granite pillars laid across. This island and the isthmus occupied by the city, form two ports, the old port on the west, and the new port on the east. The old port is at the end of an extensive roadstead, the entrance to which lies through a chain of rocks which stretches from Cape Marabout on the mainland, to *Ras el Tyn*, fig-tree cape, the western end of the island. There are three channels into the road, the deepest of which will admit frigates. The port itself is sheltered from the violent winds that blow between north-west and north-east by the high coast of the island. The anchorage is good, and the port might be made one of the best in the world. The new port has also a line of rocks across its entrance, and is exposed to the violent north and north-east winds, which sometimes render anchorage impracticable. It is also very shallow in many parts. Upwards of 200 merchant vessels are frequently to be seen in the port at the same time. From 5000 to 6000 men are constantly employed in the dock-yard and arsenal. The naval hospital at Fig-tree point can hold 300 beds, in spacious, lofty, and well aired wards; there is another hospital in the arsenal for the workmen, and a garrison hospital in the suburbs of the town for 400 patients; there is also a lazaretto in the new port. But one great draw-

back is the want of fresh water; the inhabitants have to depend upon cisterns which are annually filled partly by the winter rains, and partly by water brought from the canal. To the south of the city, along the adjoining shore of the mainland, are the ruins of the ancient *Alexandria*, the city erected by order of Alexander the Great, 332 B. C., but of which scarcely a vestige now exists. Great part of the ancient site is enclosed by a double wall flanked with lofty towers, built by the Arabs; but it exhibits only shapeless heaps of ruins. It contains, however, at its north-east corner, two granite obelisks, still very entire, the one of which is erect, and the other lying near it on the ground. These are commonly called Cleopatra's needles, and are nearly of the same size; the whole height of the erect one, including the pedestal and three steps, is 79 feet. Near the centre of the enclosure stands the mosque of St. Athanasius, on the site of a church erected by that patriarch during the fourth century, and which contained the famous sarcophagus, supposed to be the tomb of Alexander, which is now in the British Museum. The cisterns also, for retaining the rain-water, are still in a great measure preserved, consisting of vaulted chambers supported by columns, which form arcades of two or three storeys. On the outside of the walls is the remarkable monument, called *Pompey's Pillar*, which stands on a mound about 40 feet high. The shaft, a single piece of red granite, is about 67 feet high; and, including the capital and pedestal, the height of the whole pillar is about 94 feet. It is of the Corinthian order, but in bad taste. On the west side of the plinth of the base is a Greek inscription, from which it would appear to have been erected in the time and to the honour of the Emperor Diocletian. Its foundation rests on a piece of yellowish breccia, with hieroglyphics, placed with the wrong end upwards. Near the south-western corner of the walls, in the calcareous rock which faces the sea, are almost countless excavations which once formed part of the necropolis or burial place of the Alexandrians. Fifteen miles north-east of the city are the castle, island, and bay of *Aboukir*, so renowned for the battle of the Nile 1st August 1798, and the battle of Aboukir 21st March 1801.

The only other towns deserving notice in Lower Egypt are *Rosetta*, *Damietta*, *Menhallet*, *Tantah*, *Semenhoud*, *Mansourah*, *El-Arish*, and *Suez*. *Rosetta*, which stands on the western bank of the western Nile, about five miles from the sea, is a well built town, surrounded by low walls, and containing 15,000 inhabitants; but the formation of the Mahmudiah Canal has diverted its trade to *Fouah*, which is improving in extent and wealth at the expense of Rosetta. *Damietta*, or *Damiatta*, or *Dimyat*, a large, irregularly-built town, stands on the right bank of the eastern Nile, about 7 or 8 miles from its mouth. It used to be the seat of a large trade, chiefly contraband, but it has no harbour, vessels being obliged to land and take in their cargoes at the mouth of the river on the outside of the bar, and the goods are carried to and from the city in boats. Its population has been estimated so high as 70,000 or 80,000; but, like Rosetta, it is now a place of no importance, nor does its limited population allow it to rank among the large towns. *Menhallet-el-kebir*, or the Great Quarter, which is considered the chief town of the Delta, is situate about 55 miles S.E. by E. from Rosetta, 48 S.W. from Damietta, and 63 nearly north from Cairo. It was also considered the most industrious manufacturing town in Egypt; the chief fabrics being those of silk, and particularly a sort of linen cloth with silk borders, used in the baths, with which it supplies the whole country. Population 17,000. *Tantah*, 20 miles S.W. of Menhallet, a town of 10,000 inhabitants, chiefly supported by the pilgrims that flock to the tomb of Seid Ahmed el Bedaouy, who died in the thirteenth century with great reputation for sanctity. So many as 150,000 persons sometimes assemble, and the mosque, which contains the holy shrine, is one of the most splendid buildings of modern Egypt. *Semenhoud*, supposed to be the ancient *Sebennytus*, which gave its name to a branch of the Nile, is situate on the western bank of the river near Menhallet, and is a flourishing town of 4000 or 5000 inhabitants. *Mansourah* is a large town on the right bank of the Nile, 10 miles below Semenhoud. *El-Arish* the frontier town of Egypt, towards Syria, is a miserable place in the midst of a desert, on the shore of the Mediterranean Sea. It stands on an eminence among sand-hills and clumps of trees, about half a mile from the sea; and at the distance of 174 miles E.N.E. from Cairo. It is supposed to be the ancient *Rhinocorura*. *Suez* or *Souweis* (*i. e.* the mouth or opening), is a very miserable town, situate at the head of the western gulf of the Red Sea, about 70 miles almost due east of Cairo, by the shortest line, but the actual distance on the usual road exceeds 78 miles. It is nevertheless important as the best naval station for the trade carried on between the Mediterranean and the Red Sea. It is a poor ill-built town, situated in a desert; it receives all its provisions from Cairo, and had till lately no water nearer than 12 miles, which even then was very brackish. In consequence, however, of experiments lately made, water has been found in sufficient abundance at no great depth, in the desert. In the roadstead there is very good anchorage for ships of 800 or 1000 tons. The high road between Suez and Cairo has been furnished with three stations for the accommodation of travellers.

In Upper Egypt, the only towns of modern importance are *Atfieh*, *Benisouef*, *Medinet-el-Faioum*, *Minieh*, *Ashmounein* or *Eshmounein*, *Es-Siout*, *Akhmim* or *Ekhmim*, *Girgeh*, *Kenneh*, *Esneh*, *Edfou*, *Assouan*, and *Cosseir*. *Atfieh*, or *Atfih*, a town of 4000 inhabitants, stands on the right bank of the Nile, in lat. 29° 28′ north, and is the capital of a prefecture. *Benisouef*, the residence of a mamoor or governor of a province, is a place of some importance, on the left bank of the Nile, about 60 miles above Cairo. It contains several mosques, caravansaries, and large private houses; with an extensive, well supplied bazaar, which is frequented once a-week by the peasants of the country round. The great sugar plantations of Egypt commence a little to the north of Benisouef; and these, together with the durrah, seem to occupy all the industry of the inhabitants, there being few fields of tobacco, wheat, cotton, or indigo. Opposite to Benisouef is the road to the convents of St. Anthony and St. Paul, the former named after the founder of monachism, the latter after the first hermit. St. Anthony or *Dair* or *Deir Antonios*, is about 76 miles from the Nile, and 18 from the Red Sea, and stands on the south side of the Wady el Araba. The other convent, called *Deir Bolos*, lies beyond the eastern corner of the Kalallah or Kalil mountains, only 9 miles from the coast. *Medinet*, the chief town or capital of Faloum, is a large populous city, 50 miles S.W. of Cairo; and occupies the site of the ancient Arsinoë, on the canal of Joseph, just before its separation into nine branches. The city contains several fine mosques, and is surrounded with beautiful gardens. *Minieh*, on the left bank of the Nile, 28° 8′ N. lat. the capital of a large district, is a pretty town, with a considerable population. "The *city of Minieh*," says Mr. St. John, "contains several mosques, straight clean streets, and rather neat shops, and appears to be more opulent and populous than any of the towns farther down the river."—(I. 251.) Mr. Webster, however, says that "the *village* is small, with an immense number of tombs, covering many times the space itself occupies." *Ashmounein*, on the left bank, at a little distance from the river, in lat. 27° 48′ N., is a town with a population estimated variously at 4000, 6000, 7000, or 10,000. *Es-Siout*, or *As-Siout*, the capital of Upper Egypt, about a mile and a half from the left bank of the Nile, 27° 9′ N. lat., is a place of considerable extent, nearly circular, half a mile from the river, and surrounded by spacious gardens, in the midst of sand-hills. The population is about 12,000; the houses are neat and well built, and much cleaner than ordinary. It carries on a considerable trade in linen cloth, earthenware, natron, and opium. A cotton manufactory was established here, several years ago, which gave employment to 800 men and boys; but the climate seemed to militate against it. The dust brought by the Khamseen winds insinuates itself among the machinery, impedes its motion, and with the heat, which warps and splits the wood-work, soon renders it useless. The dryness also of the atmosphere weakens the strength of the cotton, and makes the threads snap. *Akhmim* or *Ekhmim*, on the right bank, in lat 26° 32′, is a town of 10,000 inhabitants, with a large cotton factory, and the ruins of a temple and catacombs. *Girgeh* or *Jirgeh*, formerly the capital of Upper Egypt, which derives its

name from a monastery dedicated to St. George within the walls, is still a considerable
taining nine large mosques, whose elegant minarets and spacious domes standing in the m
uriant date trees, which give the place the appearance of a grove when viewed from the riv
aspect of much grandeur. The city stands close to the river, on the left bank, in 26° 20′ N
private houses, two or three storeys in height, with neat latticed windows, are built with
bricks, and appear to be larger and more commodious than in the majority of Egyptian t
cleanliness is by no means the characteristic of its inhabitants. *Kennek* or *Ghennek*, o
bank of the Nile, 26° 10′ N. lat., is famous for its manufacture of pottery called bardaks, m
rous clay, and in great request all over Egypt as water-coolers. The town also derives son
ance from its situation on the road to Cosseir, so that the greater part of the trade of that
Egypt passes through it. It is, on the same account, the place of assemblage for the Africa
pilgrims on their way to Mecca. The road to Cosseir lies almost due east through the des
tract quite practicable for wheel-carriages. *Esneh*, the last great town which occurs in
the river, situate on its left bank, in 25° 18′ N. lat., in a plain of considerable extent, is
place, and the rendezvous of the caravans of Dar-Fur and Sennaar. It has manufactories
cloth, pottery, and a kind of shawls called millayeh; and is famous throughout Egypt
camel-market or fair. It occupies the site of the ancient *Latopolis*, among the remains of w
beautiful portico of a temple, now used as a cotton warehouse. *Edfou*, a small town of abo
habitants, on the left bank of the river, 25° N. lat., where is made a kind of earthen ves
same shape as those represented in the ancient paintings. *Assouan* or *Es'Souan*, in Cop
which signifies "the opening," the Latin *Syene*, on the right bank of the Nile, in 24° 5′ 30
a small town with considerable trade. It is surrounded on all sides by dark and rugged r
which consist of that rose-coloured granite which from this place is called syenite; and
town for several miles are the quarries from which the ancient Egyptians procured the gr
for building their temples. The town is scattered in a straggling irregular shape on the
barren hill; it is, however, considered the most romantic spot in Egypt. The Nile here
pearance of a narrow lake surrounded by bare but picturesque rocks, at the foot of whic
belt of bright verdure, interspersed with scattered groves. There are but few ruins of t
city. *Cosseir*, or *Kosseir*, or *Kossir*, or *Kosayr*, or *Qoreir*, is a port on the Red Sea. The
assemblage of Arab huts, built of wood and mats, situate in a very poor and barren countr
any good water but what is brought from Arabia or the Nile. It has, however, a consider
though its harbour is small, and the anchorage unsafe for ships during several months o
Cosseir is 119 miles from the Nile at Kenneh, but only 108 from Koptos or Keft; the r
over a perfectly level tract passable by carriages. It is situate in 26° 6′ 39″ N. lat., and 34
long. Between Cosseir and Kenneh there are eight wells, four of which have been put into g

ANTIQUITIES.—Egypt possesses many charms for the traveller, and, in respect of antiqui
the palm above every other country. The celebrated PYRAMIDS demand our first attent
principal of these, three in number, are situate on a platform of rock, about 100 feet abov
of the Egyptian plain, at the distance of five miles S.E. of Geeza. The largest, called th
of Cheops, occupies a base of 750 feet square, and rises to the height of about 600 feet. It is
the others, of large blocks of stone, which form so many gigantic steps (above 200 in numb
top, where there is a small platform, affording an extensive view over a landscape of the m
ordinary features. To the south, scattered in irregular groups, are the pyramids of Sakkar
sir, and Dashour, glittering in the sun like enormous tents, and appearing from their nu
the confusion of their arrangement, to extend to an unknown distance into the desert. O
is the wilderness of Libya, stretching to the edge of the horizon; whose boundless un
apparently destitute of the very principle of vegetation, seem to be the prey only of the s
and the whirlwind. In the foreground the sand swells into hillocks resembling the kerne
pyramids. To the north and the east, the landscape presents a striking contrast to the sava
of the other sides; the valley of the Nile is seen luxuriantly covered with verdure and bea
fields, green meadows, wood of various growth and foliage, scattered villages, a thousan
sheets of water, and, above all, the broad glittering stream of the Nile itself, spreading fe
abundance like a beneficent god. Beyond this are the white buildings of Cairo, Boulak, an
backed by the long lofty range of the Mokattam hills, reflecting the bright rays of the sun.
the Nile is in flood, this blooming valley appears like a wide sea, with a few scattered island
trees peering above its smooth surface, with Cairo and the Mokattam hills forming its fart
This pyramid has long been open, and contains a small chamber, with a hollow sarcophagu
as King Pharaoh's tomb. Several other apartments and winding passages have lately been c
in its recesses by persevering travellers, particularly by Colonel Vyse, who has succeeded in
its whole internal structure. The next adjoining pyramid is that of Cephrenes, opened b
who discovered that he had been anticipated by Arab investigators, several centuries earl
still found in a sarcophagus some bones, which are believed to be those of a cow or ox.
456 feet high. The next is the pyramid of Mycerinus; and numerous pyramids are fou
south, for upwards of twenty miles, at Abousir, Sakkara, and Dashour; also in other pa
country, and even in Nubia; but for what purpose, by whom, or when, such stupendous fa
erected, is quite unknown. About 300 paces from the second pyramid is the gigantic sta
Sphinx. It was formerly covered to the neck with sand, but that having been cleared away b
Caviglia, the length of the complete statue was found to be 125 feet from the fore part to the
its paws projecting 50 feet forward. The breast, shoulders, and neck are those of a human
body is that of a lion. The head-dress resembles an old-fashioned wig; the ears project
ably; the nose is broken; the face seems to have been painted red; the features are Nubian
Egyptian; the expression is particularly placid and benign. It has been again covered up
to the neck.

THEBES, the city of the "hundred gates," the original capital of Egypt, now exists only in
which extend for many miles on both sides of the river, a little to the north of the latitude
The principal ruins are situate at Luxor, Luxor, El Uksor, or El Qosoor', Karnac and M
on the right, and Medinet-Abou and Gournah on the left bank of the river. The period of it
splendour appears to have been under the kings of the 18th, 19th, and 20th dynasties, whic
pollion places between the years 1822 and 1300 B.C. At that time it appears to have been
miles in circuit, and contained temples and palaces filled with immense wealth, which in la
was carried off by Cambyses, king of Persia. Laid waste by king Ptolemy Philadelphus, and
(28 B.C.) by Cornelius Gallus, this ancient city has never again been rebuilt, and now presen
mass of ruins, which may be regarded as the most magnificent, as well as the most ancien
world. Among the ruins on the left bank of the Nile are an immense hippodrome or circus;
mous palace of Rhamses-Meiamoun, at Medinet-Abou; the Memnonium of the Greeks, b
Champollion calls the Amenophion of the Egyptians, the ruins of which extend 1800 feet in le
contain more than 18 colossuses, the smallest of which is 20 feet high; and near the bank of
are two colossi in a sitting posture, 61 feet high. The most northerly of the two is called
but appears to be the image of king Amenophis III. of the 18th dynasty, and the celebrated
Memnon, of which the Greek writers report that its lips uttered musical sounds when they w
struck by the rays of the rising sun. The head of the younger Memnon, of extraordinary be

weighing 12 tons, was carried off by Belzoni, and presented by him to the British Museum. The tomb of Osymandias, as it is called by the Greeks, but whose proper title appears to be the Rhameseum, deriving its name from its founder Rhamses the Great, is the most ruinous of the monuments of Thebes: among its most perfect portions are a large hall, of which 30 columns still remain entire; and the enormous wreck of the colossal statue of Rhamses, which, though in a sitting posture, is 53 feet high above the base. The small temple of Athor is remarkable for its elegance and ornaments. The great Syringe, with its long corridors and large subterranean apartments. The ruins of Gournah present the imposing remains of the Menephtheum, or the palace of king Menephthah I. Along the right bank of the Nile we find, at Luxor, the remains of an immense palace, built by Amenophis-Memnon (Amenothf III.) of the 18th dynasty, and Sesostris the Great. In front of it were two obelisks, of 72 and 75 feet high, each formed of a single block of rose-coloured granite, of exquisite workmanship, and beside them four colossal statues of the same material; behind these is an immense front or gateway, 50 feet high, leading into a peristyle of 200 columns, the largest of which are about 10 feet in diameter. According to Champollion this immense fabric was the work of Rhamses the Great and several other kings. The smaller of the two obelisks was lately brought to Paris. At Kafr-Karnac is the Sphinx alley, extending more than 6000 feet in length, between Luxor and Karnac, and containing so many as 600 sphinxes of colossal size. But it is at Karnac that the magnificence of the ancient kings is fully exhibited. In the ruins of this wonderful palace the traveller is astonished by the grandeur of the buildings, which seem almost too great to have been the work of man. It contains an avenue of single stone pillars, each 70 feet in length, but all of them thrown down; a hall 318 feet long by 160 wide, having its roof supported by 134 pillars, the largest of which measures 70 feet high and 11 in diameter; and the circumference of their capitals being 64 feet, a hundred men may easily stand upon each of them! In another court are two obelisks, 70 feet high, but only one of them is erect; and in another hall or court is the largest of the existing obelisks, which is 91 feet high. On the walls are exhibited the portraits of most of the kings, whose deeds are represented in tablets of colossal size. Among them are Meneftah I. fighting with the enemies of Egypt, and returning in triumph; the campaigns of Rhamses the Great; and also those of Sesonchis, who is represented dragging at his feet the Theban trinity Ammon, Mouth, and Khous, with the chiefs of more than 30 vanquished nations, among which Champollion has found the name, in hieroglyphics, of *Ioudah-melek*, the king of Judah. To the west of Medinet-Abou are situate the tombs of the kings of the 18th, 19th, and 20th dynasties, cut in the calcareous rock, at different levels, in a dry valley, now called *Biban el Moluk* (tombs of the kings), on the left bank of the Nile. They are all of extraordinary splendour; the largest and most magnificent of them being that of king Rhamses-Meiamoun, which is adorned with sculptures of the highest interest. One of its small side halls contains, among other things, a representation of the operations of cookery; another, that of the richest and most sumptuous furniture; a third exhibits every sort of military arms and ensigns; with the barks and royal barges fully decorated. Several of these royal tombs contain on their walls numerous inscriptions, made by travellers of all ages, from the days of the Pharaohs, the Persians, the Greeks, and the Romans, to the travellers of the middle ages and those of our own times. The *Necropolis of Thebes* occupies an immense extent of ground on the left bank of the Nile, where are found tombs of all the kinds in use among the ancient Egyptians. It is in these tombs that the finest mummies and the most ancient papyri are found. The village of Gournah, indeed, partly consists of this necropolis; the Arabs live in the very tombs, whose former inhabitants they use for fuel. The trade in antiquities has been, since 1817, the only occupation of this ferocious and brutalized tribe of thieves.

MEMPHIS, the second capital of Egypt in point of antiquity, stood on the left bank of the Nile, not far from the great pyramids; its finest buildings were destroyed by Cambyses in the sixth century B. C.; and, at last in the seventh century of the Christian era the city was taken by assault and utterly destroyed by the Arab conquerors. Almost every trace of it has now disappeared, having been covered up by the annual deposits of the Nile, and the city is now represented by the villages of *Memf*, *Mitrahineh*, and *Bedreshein*. Near Abousir, in this neighbourhood, also are found the catacombs of birds so famous in the narratives of travellers; they consist of extensive corridors filled from top to bottom with little jars containing the mummies of these animals.

SAIS, the capital of the last native kings of Egypt, before the Persian conquest, is now represented by *Sa-el-hadjar*, a miserable village in the Delta, 40 miles S.E. of Rosetta. It was represented as the mother city of Athens, whose patron goddess Pallas-Athené, was the *Neith* of Sais, with the letters of the name transposed in writing; though this fact is disputed by some modern antiquaries. All that now remains of the splendour of Sais, consists of some colossal mounds.

Matarych or *Mataria*, a small village, 6 miles N.E. by N. of Cairo, contains several remains of buildings belonging to the ancient *On* or *Heliopolis* (Sun-town), so called by the Greeks on account of its magnificent temple of the sun. It was one of the largest cities of ancient Egypt; but even so early as the first century of the Christian era it was almost deserted, and many of its finest ornaments were carried off to embellish Rome, and more lately to adorn Constantinople. The ruins of the temple are still found, with the remains of a sphinx mentioned by Strabo, and a fine obelisk, consisting of a single block of granite, 68 French feet high, by 6½ broad at the base. *Belbeys* or *Balbeis*, 24 miles farther N., in the same direction, a village fortified by Bonaparte in 1798, is near the site of *Onion*, where was a Jewish temple, built on the model of that of Jerusalem, by Onias, son of the high priest Onias III.; where the same rites and ceremonies were practised as in the parent temple. It was closed by Vespasian, and afterwards fell to ruin. *San*, a fishing village near the lake Menzaleh, represents the ancient city called *Zoan* by the Hebrews, and *Tanis* by the Greeks, and which was most probably the residence of the Pharaohs of Moses, and the scene of his miracles. It still contains several obelisks, and also some other remains. Near the south-eastern corner of lake Menzaleh, is a Turkish fort called *Tyneh* or *Thineh*, in the vicinity of which are the ruins of *Pelusium*, the ancient bulwark of the north-eastern frontier of Egypt.

DENDERAH, near the left bank of the Nile, almost opposite Kennch, represents the ancient *Tentyris*. About three miles west of the village is the splendid and almost perfect temple of Athor, the Egyptian Venus, which is considered as the masterpiece of ancient Egyptian architecture. It contained a sculptured zodiac or planisphere, which was carried to France in 1821, and is now in the Louvre at Paris. Near Girgeh, 5 miles W. from the Nile, on the Bahr-Yusouf and the borders of the desert, are the remains of *Abydos*, accounted the second city of the Thebaid; and which contained a palace of Memnon, and the tomb of Osiris. Its ruins are almost completely covered with sand; but some of the buildings may be entered by the roof, where spacious apartments are found entire, adorned with hieroglyphs and paintings, the colours of which are quite fresh and brilliant. Splendid remains of temples are also found at Edfou, the *Apollinopolis magna* of the Latins; at Esneh; at *Kau* or *Gau*, the ancient *Antæopolis*, on the right bank of the Nile, 27° N. lat.; at *Cous*, or *Apollinopolis parva*, a little to the north of Thebes; at *Sheikh-Abadeh*, the ancient *Antinoe* or *Antinopolis*, on the right bank, 27° 48′ N.; at *Koom-Ombos*, north of Syené, and various other places. The very fine temple of *Hermopolis magna*, on the left bank of the Nile, a little to the north of Antinoe, was a few years ago undermined by the river, and destroyed. In its vicinity are still found the remains of a vast necropolis. A little farther north than Hermopolis, but on the right bank of the river, at the village of *Beni-Hassan*, are the remains of a place called by the Greeks *Speos Artemidos* (Diana's grot), containing innumerable hieroglyphics, paintings, and other remarkable objects.

Assouan or *Es Souan*, more than any other place in the world, presents that confused mixture of monuments which, even in the history of the most powerful nations, reminds us of the impotence of man. Here the Pharaohs and the Ptolemies built temples and palaces, which are now half covered with loose sand; and the Romans and Arabs constructed forts and walls; while, on the ruins of all these buildings, travellers of modern Europe bear witness to the presence of the soldiers and philosophers of Syene. And opposite to Assouan, on the south is a chain of beautiful and fertile islets. One of these, opposite to Assouan itself, is famous for the *syenite* of the ancients, now called *El-Sag*, where the remains of a fine obelisk are still to be seen, but the materials of its two temples have been carried off to build barracks and magazines at Assouan. A little farther south is the island of *El-Hesif*, the ancient *Philæ*, a beautiful little island about 400 feet long by 100 broad, rising in the middle of the river, and covered with columns, pylons, and towers, the ruins of its majestic temples, of which Denon distinguished eight, built at various periods, and quite separate, though some pains have been taken to combine those which were connected. The lowest cataract of the Nile is between Philæ and Elephantine. The ancient geographers and historians speak of it as a prodigious fall, whose sound deafened the adjacent inhabitants; but at present the fall is very inconsiderable, and the river exhibits only a series of rapids, as it dashes through amidst the granite rocks that strew its bed. About 37 miles N. of Assouan, on the left bank of the river, is *Hagar Silsili*, where are the most extensive and remarkable quarries in Egypt, perhaps in the world. No monuments which exist above ground convey so grand an idea of the labours of the Egyptians as these quarries, the most remarkable of all their works. Passages are as streets cut in the rock, and rising perpendicularly to the height of 30 or 40 feet on each side, sometimes straight, at other times winding, extend from the brink of the river into the very heart of the mountain, where the rock has been cut away and spaces cleared equal in size to the largest squares of London. Towards the north are seen innumerable chambers, like the dwellings of the Titans, and prodigious colonnades, extending round the base of the mountains. The rough-hewn immense roof is supported by huge, square, or polygonal columns of solid rock, sometimes sixty feet in girth. Enormous blocks of stone, completely severed from the mountain, are placed upon it, as massive pieces ready to be moved; and others still more vast have been cut and carried away, the places from which they were taken exceeding 40 feet in length.—(*St. John's Egypt*, II. 14.)

About 150 miles S.S.W. of Assouan, at the head of Foul Bay, on the shore of the Red Sea are the ruins of the ancient Berenice, where the main streets can still be distinguished, and even the materials of the houses, consisting of corals, madrepores, and petrifactions, the product of the adjoining sea. Opposite to the town is a very fine natural harbour, but too shallow for large vessels, and obstructed by a bar of sand. The extent of the ruins is about 2000 feet by 1000, which might have contained about 10,000 people. The site is now quite deserted. About 30 miles inland are the famous emerald mines of the ancients in the Jebel Zubara, they have been opened by modern speculators, but have been found to contain only a few emeralds of inferior quality.

This subject is very far from being exhausted, but it is only the principal and more important of the ancient remains that our space will allow us to notice.

§ 2. *NUBIA.*

The name Nubia is vaguely applied by European geographers to the vast region which extends southward from Egypt to the north-eastern borders of Abyssinia, and eastward to the Red Sea. It never formed a separate kingdom, or political division of Africa; but has, on the contrary, been always divided among a great number of little states of different lineage, and contained within its limits several contemporaneous independent states. Of late years, however, it has all been subjected to the dominion of the Pasha of Egypt, and garrisoned by his troops. Strictly speaking, it is only the northern part of the region that is called Nubia, the inhabited districts, above Wady Halfa, stretching to the Red Sea and the borders of Abyssinia were formerly known as the Kingdom of *Sennaar*, and are now called by the Turks *Turkish Arabia*, and by the Blacks, a name, however, which they extend as far west as Bornou, and only limit to the countries not subject to the Pasha. The greater part of the country consists of flat tracts of sand, that which is called the desert of Nubia extends on the east of the Nile from Assouan to Dongola. The traveller through it constantly traverses deep sand or sharp stones. It is not, however, without plains, for it contains hills which rise above 1000 feet, and is interspersed with wadys or valleys, that afford a supply of water, and support some trees, shrubs, and grass. In several places, however, the ground is covered with a layer of rock-salt, or studded with masses of granite, jasper, or marble. Now and then occurs a grove of stunted acacias, or tufts of colocynth and senna. The traveller often has access to no water to allay his thirst, except what is brackish or putrid, for the savage inhabitants lie in ambush near the few springs which the country contains. The western desert, or Libyan Sea, is also extensive, and called the desert of *Bahiouda*. Between these two wildernesses lies the narrow valley of the Nile, which, though deprived of the advantages of the regular inundations, in consequence of the height of the ground above the surface of the river, contains some districts, and more particularly islands, where a high degree of fertility rewards the industry of those who raise, by artificial means, the waters of the river to irrigate their lands. In many places the cultivable ground is only a few feet in width, while it increases in others to a quarter of a mile; but in some places the desert approaches to the very edge of the river. The southern parts of the country, which are watered by the Tacazze, the Astoras, and the Abiad, present a very different appearance. Along the banks of these rivers are immense savannahs, exhibiting at times, wide, boundless forests of gigantic grass, alternating with thickets of mimosa, leagues in extent, which are crossed and interwoven with thorny parasitic plants, impenetrable to man, and are the retreat of lions, tigers, and hyenas. Southwards, in the province of Fazoglo or Fasoglo, the plains are bordered with mountains of picturesque forms, but low, not exceeding, it is supposed, 3 or 4 feet above the level of the sea. They do not form connected chains, but stand isolated on the immense savannahs.—(*Russegger, in Athenæum, May 5, 1838.*)

From January till April the country is burned up with intolerable heat. The thermometer sometimes reaches 120° Fahrenheit, and the burning sands render travelling impracticable, except by night. The rainy season lasts from June till September, with frequent irregularities, covering the habitable country in the south with verdure; but frequently, the extreme heat, with the rains, and the formidable swarms of the salt-alya fly spread desolation even over that region. The northern limit, however, of the tropical rains is about 18° N. lat.; and the tract of country between that and Thebes, or even lower, is said to be the driest on the globe, and probably the hottest. The durrah and the banana are the principal sorts of grain, though wheat and millet are also cultivated. Two sorts of senna are exported; but the sugar-cane, which abounds along the banks of the Nile, is not turned to any account. The doum tree predominates in the forests, which also contain many species of palms, particularly the date tree, of which so many as 300,000, between Berber and Koroskó, are taxed by the Pasha. The acacia-vera and mimosa-nilotica extend from Egypt to Dar-Fur. The grass of the plains attains a height of twelve or fifteen feet, forming a mass as impenetrable as a wall; it is even difficult to form an idea of the grass forests which are found chiefly in the vicinity of the great rivers. Elephants, rhinoceroses, gazelles, ostriches, giraffes, and other usual African animals, are found within the limits of

Nubia. Wild dogs and foxes appear to be numerous, as Ruppell has discovered no less than four species. The variegated fox-dog is ochre-coloured, with thick fur, variegated with black; it was found both in Nubia and Upper Egypt, where it lives in the deserts, but does not burrow. The Nubian dog or rather wolf, which appears to be rare, is light grey, marked with a few black spots on the back, and has a black tail. The Kordofan fox occurs also in Nubia; it is nearly related to the fennic, which was also found by Ruppell in the neighbourhood of Ambukol, and in the desert of Korti, where it lives in holes dug by itself, and not on trees, as Bruce describes those of Abyssinia. Several birds appear to be peculiar to this region, or at least have not yet been known to inhabit any other part of Northern Africa; such as the occipital vulture, first discovered by Burchel in South Africa. It inhabits the borders of both Nubia and Abyssinia. Bustards, shrikes, thrushes, quails, and partridges, are also mentioned by travellers.

The high lands of northern Nubia are inhabited by two nearly independent nomadic tribes. One of these tribes occupy the western bank of the Nile, and are called the *Barabras*; but they call themselves *Nonbah*, *Kenouz*, &c. Barabra and Bereber is the general name by which the Nubians are known in Egypt, and according to Burckhardt, it seems to be derived from *Berber*, the name of a wady or district of Upper Nubia, on the right bank of the Nile, about 18° N. lat. The Barabras are a very lean race of people, apparently destitute of both fat and flesh, and consist of nerves and sinews with a few muscular fibres, more elastic than strong. Their shining skin is of a transparent black and brown; but this is the only resemblance they bear to the negroes of Western Africa. Their hollow eyes sparkle under an uncommonly projecting eyebrow, their nostrils are large, the nose sharp, the mouth wide, but the lips thin. The hair of the head and beard is thin and collected in small tufts. Wrinkled at an early age, but always lively and nimble, they only betray their age by the whiteness of their beards. Their physiognomy is cheerful, and they seem to be lively and good-humoured. The Nubians, says Mr. Holroyd, are a fine, strong, hard-working, industrious people; they possess a considerable share of pride and natural courage, and condemn most violently the unnatural propensities which are common among the Turks and many of the Arabs. The women are remarkable for their chastity, and their feelings are social and domestic. There are very few schools among them, and a man who is able to read and write is accounted a person of consideration. The eastern deserts, from Cosseir to the south of Nubia, are occupied by the *Ababdes*, a people who differ entirely in customs, language, and dress, from the Arabs found in Egypt. They are black, but have the same form of head as Europeans. Their heads are uncovered, but their hair is worn long. Their clothing consists of a piece of cloth worn over the loins. They anoint their bodies, and particularly their heads, with fat. They have no fire-arms, and few horses; they rear a sort of camel which they call aguine, which is smaller, better made, and more active than the common species. They are Mahometans, but not very rigid in their faith; and they bury their dead by covering their bodies with stones. The *Sheygya*, *Sheggeea* or *Shaykye*, are a race of negroes once peculiarly roving, fearless, and warlike, who occupy both banks of the Nile above Dongolah They had numerous slaves, whom they employed in tilling the ground, and other laborious duties, while they devoted themselves entirely to arms; but in consequence of a desperate battle with the Egyptian troops at Korti, in which they were entirely discomfited, they are now, like the other Nubians, subjects of the Pasha. In 1837, Mr. Holroyd found them reduced to poverty and the greatest state of degradation by Turkish misrule and despotism.

The *Noabah* are a gentle race of negroes, in the province of Sennaar, with small features, woolly hair, flat noses, and speak a soft sonorous language totally different from that of their neighbours. They are idolators, and in some respects Sabians, for they always do homage to the moon. They are circumcised; but keep herds of swine, and eat pork freely. In 1504, a negro nation, till then unknown, came down the Abiad, and subdued the Nubians. They called themselves *Shillouks* or *Shellukhs*, and founded the city of Sennaar on the Azrek. They were originally idolators, but their intercourse with Egypt has produced their conversion to Islam.

The people who dwell along the Nubian shore of the Red Sea appear to be of Arab origin, and still preserve in a great degree the habits of the ancient Troglodytes or dwellers in caves. They speak the Gheez language, a dialect of the Arabic. They are in the lowest stage of savage life, and derive their principal support from fishing. Towards the north-east, however, near Foul Bay, are a people of somewhat better habits, called the *Bisharees* or *Brjahs*, who lead a nomadic life; deriving abundant food from the milk and the flesh of their camels, cattle, and sheep. Bruce believed that they spoke a dialect of the Gheez, but the Arabian historians of Nubia make them belong to the race of Berebers or Barabras.

The old political divisions of the country have been obliterated by the recent Egyptian conquest, and we are not aware that the country has yet been divided anew into provinces and municipal districts. The cities and towns are few and unimportant; but the remains of ancient buildings and cave temples, along the Nile, chiefly in lower Nubia, form very attractive objects of curiosity to travellers and antiquaries. *Dongolah*, called also *Agouz Dongolah*, or Old Dongolah, the largest, richest, and most populous city of Nubia, during the middle ages, is now reduced to the size of a village, with about 300 inhabitants. It stands on the right bank of the Nile, in 18° N. lat. and 31° E. long. *Marakah*, or New Dongolah, a large thriving and populous town on the left bank of the Nile, about 70 miles N.N.W. of Old Dongolah, built several years ago by the Mamelukes, after their expulsion from Egypt, is the residence of a Turkish Aga, whose government extends from Wady Halfa to Wady Gammer. In the river to the north of Marakah is the magnificent *island of Argo*, about 30 miles in length, and 6 or 7 in breadth, formed by the rich alluvial deposits of the Nile, which produces grain, cotton, indigo, and dates. *Sennaar*, lately the capital of the kingdom of Sennaar, which extended over the greater part of Upper Nubia, and is said to have once had so many as 100,000 inhabitants, is now almost deserted, the people having emigrated to Aleis, ten days' journey to the south-east, at the period of the Egyptian conquest. The few who remain live in straw huts, with the exception of two or three slave merchants whose houses are made of mud. It stands near the left bank of the Azrek, in 13° 37′ N. lat. and 33° 30′ E. long. *Kartoum* or *Khartum*, at the confluence of the Abiad and the Azrek, is now the seat of government; it has sprung up since Soudan became subject to the Pasha, and contains about 15,000 inhabitants. *Shendy*, on the right bank of the Nile, about midway between the confluence of the Azrek and the Abiad, and the mouth of the Tacazze, a town of 800 or 900 houses, and a population of 7000, is now in ruins. Before the Egyptian conquest it was the principal commercial mart of Nubia, and a great slave market, lying on the route from Dar-Fur and Soudan to Souakin, where merchants and pilgrims took shipping for Jiddah. At Assour or Hafhour, a little village below Shendy, are the ruins of *Meroe*, a city celebrated for its monuments, its commerce, its oracle of Ammon, and its pontiff king, chosen, as was believed, by the god himself, from among his priests; and a little further down the river is the island of *Kourgos*, which contains three groupes of ancient mausoleums, of a pyramidal form. Below the junction of the Tacazze, on the right bank of the Nile, is *Berber*, a town of 8000 or 9000 inhabitants, which is the rendezvous of the slave merchants from Sennaar and Kartoom, who proceed to Cairo by the desert of Korosko. *Derr*, the chief town of Lower Nubia, is a small place, with a thriving and increasing population, on the right bank of the Nile, about 130 miles above Assouan A few miles further up is *Ibrim*, a fort or castle on a perpendicular rock overhanging the river; but it is now in ruins, having been destroyed by the Mamelukes. *Souakin*, *Suakem*, or *Swakem*, the only seaport of Nubia, is situated on the west

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the exhalations of stagnant water, occasion elephantiasis, ophthalmia, and many fatal diseases. The winter, in so far as weather is concerned, begins in June, and continues till the beginning of September, during all which time the incessant rain, often attended with thunder, and dreadful hurricanes, puts a stop to agricultural labour and military operations. The other months are not entirely exempt from inclement weather. The finest are those of December and January. But the mountainous surface of the country occasions many variations of climate and season. In the east, below the mountains on the borders of the Red Sea, the rainy season only begins when it ceases in the interior, and that region is burned up at other times with intolerable heat.

Abyssinia is said to contain many mines of iron, copper, lead, and sulphur; and gold of extreme fineness is or used to be produced in Damota, and the shallow mines of Narea. Bruce also informs us that the finest gold is found in the western provinces at the feet of the mountains Dyre and Tegla; and along the western frontier M. Russegger has lately found a prodigiously large vein of quartzose granite, consisting of quartz, with disseminated copper and silver ores of various kinds. At the south-eastern border of Tigré there is a great salt plain which is said to extend from south-east to north-west for four days journey, and which took five hours to cross it, when it was visited by Mr. Coffin in 1809. For about half a mile the incrustation was slippery, and broke under the tread, but farther on, he found it to be hard, rough, and irregular, like a sheet of ice. On the west side he found the Abyssinians cutting out pieces like a mower's whetstone, which is done with tolerable ease, as the salt lies in horizontal flakes. The salt near the surface is pure and hard, but beneath, it is coarser, and requires some exposure to the air before it hardens. In some parts the incrustation is three feet deep; but, in general, at the depth of two feet, it is too much mixed with earth to be fit for use in its native state. This district supplies the whole of Abyssinia with salt; and the mineral, when cut into long flat pieces, is one of the principal mediums of exchange.

Though situate within the tropics, the character of the vegetable productions of Abyssinia is somewhat extra-tropical, bearing but little affinity to the vegetation of the opposite and western coasts of Africa in the same latitude. The chief alimentary plants are millet, barley, wheat, maize, and teff. All travellers concur in praising the fine wheaten bread; but that is eaten by people of rank only. The teff or tafo is a grain smaller than mustard seed, with an agreeable taste, and not liable to be spoiled by worms. It is commonly sown in all parts of the country, and from it the bread is made which is generally used by all classes. The bread made from it is soft and spongy, with a sourish, but not disagreeable taste; and from this bread also, the people make bouza, a kind of beer, which is the common drink of the country, by pouring warm water upon it toasted, setting it by the fire, and stirring it frequently, till, after three or four days, it acquires a sourish taste. There are generally two harvests; one during the rainy season, in July, August, and September; and the other in spring. At Adowah and the neighbourhood, there are three crops. Some vines are cultivated, and wine is made, though in small quantity. The people cultivate also great quantities of a herbaceous alimentary plant, resembling the banana, which serves them for bread, and which Lobo calls *enete*. The papyrus is found also in the marshes as well as in Egypt; and Bruce asserts that the tree which produces the balm of Judea and myrrh is indigenous in Abyssinia, or more correctly speaking, on the coast of Adel. The whole of Abyssinia is scented with the perfumes exhaled from the roses, jessamines, lilies, and primroses, with which the fields are covered. The coffee shrub is also said to abound in the south-western parts of the country, and indeed is believed to have derived its name from the province of Kapha or Kaffa, where it is indigenous.

The animals of so extensive a country present, as might be expected, a great variety; but the zoology is very imperfectly known. It is only in the lower regions of forests that elephants and monkeys are found. The two horned rhinoceros is common; and both Lobo and Bruce think that the one-horned rhinoceros is also to be found. Hyenas are very numerous and ferocious, and prowl in the towns during night. There are also wild boars, and gazelles or antelopes; and, probably also, zebras. The cattle are numerous and of large size, and have horns of enormous length; there are also wild buffaloes, which sometimes attack travellers. The ass and the mule supply the place of the camel; while the horses, which are small but very lively, are only used for the purposes of war. Lions, too, with various kinds of leopards (one of which is black), and several species of dogs are mentioned by travellers. There are great numbers of serpents of remarkable species, and of enormous size. The lakes and rivers swarm with river horses and crocodiles. The varieties of birds are not less numerous; one of which is the great golden eagle. Travellers speak also of many kinds of wild bees, which build their nests under ground, and produce excellent honey; but the most remarkable insect is a fly, the saltsalya, the sting of which is dreaded even by the lion, and which forces whole tribes to change their residence. In size it is little larger than a bee, and has pure gauzy wings, without spot or colour. The head is large, and the mouth is furnished with three strong projecting hairs or bristles. As soon as this plague appears, and its buzzing is heard, the cattle forsake their food, and run wildly about the plain till they die, worn out by fear, fatigue, and famine. The inhabitants of all the countries from the mountains of Abyssinia northward to the confluence of the Nile and Tacazze are once a-year obliged to change their abode, and seek protection in the sands of Beja. The locusts are still more destructive, laying waste whole provinces, and involving the inhabitants in the miseries of famine. Bruce speaks also of a black ant, nearly an inch long, which cut his carpets in shreds.

The Abyssinians or Agazians approach the European model, in respect of their handsome forms, features, and long hair; but they are distinguished from all other known races by a peculiar complexion, which Bruce compares sometimes to pale ink, and sometimes to an olive brown; and which, according to the French institute of Egypt, seems to partake of a bronze colour. The language called the Gheez, which is spoken in Tigré, is regarded as a dialect derived from the Arabic. The Amharic language has also many Arabic roots, but gives evidence of a peculiar origin in its syntax. It would appear, therefore, that Abyssinia, first peopled by an indigenous or primitive race, has received, more especially in its northern and maritime parts, a colony of Arabs. The Abyssinians are nominally Christians of the Jacobite sect, and used to have an ecclesiastical primate, called the Abuna, appointed by the Coptic patriarch of Alexandria; but in reality their religion is a corrupt mixture of Paganism, Judaism, and Christianity of the lowest kind, and has very little influence on their manners and conduct. They are deeply sunk in superstition, and are altogether in a very low state of civilization. They live in round huts with conical roofs of straw; a light cotton dress, some pieces of carpet, and a few articles of pottery, form their chief objects of luxury. Their children go naked till the age of puberty. The arts and mechanical professions are chiefly in the hands of strangers, and especially Jews, who furnish all the smiths, masons, and thatchers of the country. The GALLAS are a savage people who made themselves masters of the south-western provinces; and are distinguished from the Negroes by their low stature, deep brown complexions, and long hair. They live entirely on raw flesh; they besmear their faces with the blood of their enemies, and hang their entrails round their necks, or interweave them with their hair. Their ferocity and filthiness indeed surpass every idea that can be formed of them. They worship trees, stones, the moon, and some of the stars; and believe in magic, and a future state. The SHANGALLANS inhabit the wooded heights called Kolla by the Abyssinians, in the north-western parts and to the west of the Tacazze. They are decidedly Negroes, of deep black colour, with woolly hair; but their faces are not unlike those of apes. They spend one part of the year under the shadows of trees, and the rest in caves dug in soft rocks. Some of the tribes live on elephants and rhinoceroses, others on lions and boars, and some on locusts. They go quite naked, and

[illegible] like wild beasts. The [illegible] the sources of the [illegible] but inaccessible [illegible] their independence [illegible] Abyssinian Christian [illegible] the Atawi; [illegible] people who live in [illegible] The Gurza, a [illegible] east of Abyssinia, [illegible] a numerous [illegible] are. But of all [illegible] They bear [illegible] a staff more or less [illegible] the name of [illegible] narrow limits, they could [illegible] become extinct. [illegible] part of them. So live and [illegible] than the Chri[illegible] at what period their an[illegible]

[illegible] provinces, of which the [illegible] part of the once pow[illegible] [illegible] the Moslems and th[illegible] [illegible] Among the ma[illegible] appear to be under[illegible] [illegible] provinces to the we[illegible] [illegible] in all the provinces [illegible] [illegible] were than the others. [illegible] [illegible] been in a state[illegible] [illegible] of the provinces, and li[illegible] [illegible] the capital, is situ[illegible] [illegible] to M. Ruppell [illegible] [illegible] not exceed 6000. [illegible] [illegible] as the wall he spirit o[illegible] [illegible] about his house[illegible] [illegible] the palace, and the chur[illegible] [illegible] Tigre, projec[illegible] [illegible] are the true Abys[illegible] [illegible] been dignified with [illegible] [illegible] important towns. [illegible] [illegible] appears to have abou[illegible] [illegible] tion doth whic[illegible] [illegible] of the empire [illegible] [illegible] of Abyssinia, and part of Aral[illegible] [illegible] Greek inscriptions. [illegible] [illegible] large Axumite block of gr[illegible] [illegible] northern end of the t[illegible] [illegible] country of Abyssinia, called [illegible] [illegible] [illegible] [illegible] large Greek inscr[illegible] [illegible] [illegible] an explicit of t[illegible]

[illegible] Red Sea is [illegible]

[illegible] inhabitants [illegible]

MOGHREB OR MAGHRIB.

ARDH EL MOGHREB is the name given by the Arabs to the countries of northern Africa which lie to the west of Egypt. The name signifies THE WEST; and the people of these countries are called by their oriental brethren *Moghrebins* or *Mogrubbins*, that is, *Westmen* or *Westlanders*. Moghreb is divided into four portions: 1. *Bilad*-ul-Beruber*, the country of the Berebers, or Barbary, subdivided into *Barka*, *Afrikiyah*, *Moghreb-ul-Ausat* (the Middle West), and *Moghreb-ul-Aksa* (the Far West, or Marocco); 2. *Bilad-ul-Jerid*† (the country of dates); 3. *Es Sahara* (the Desert); and 4. *Bilad es Soudan* (Negroland, or the country of the blacks.) *Bilad-ul-Jerid* is, properly speaking, only the southern portion of Barbary, comprising the region which occupies the southern declivities of the Atlas, as far as the Great Desert: it has no definite limits, and is rather a common appellation than a proper name; we shall therefore consider the first and second of these Arabic divisions as one geographical region, under the European name of *Barbary;* reserving a separate section for each of the other two.

BARBARY.

BOUNDARIES AND DIMENSIONS.—BARBARY comprehends that long narrow tract of country which forms the southern coast of the Mediterranean Sea, from Egypt to the Atlantic Ocean, being bounded on the north by that sea, and on the south by the ill-defined limits of the Great Desert or Sahara. It lies between the parallels of 28° and 36° N. lat., and between 11° 30′ W. and 27° 12′ E. long., extending about 2000 miles in length, and varying in breadth from a few miles to more than 400.

GENERAL ASPECT.—The Atlas mountains form the nucleus of Barbary; the western portion of the region is composed of these mountains, and their interjacent valleys, with a border of flat country of varying breadth, on each side of them, which slopes towards the Mediterranean Sea and the Atlantic Ocean on the one side, and towards the Great Desert on the other. Moghreb-ul-Aksa or Marocco, has its greatest length from south-west to north east, and lies between the Atlas on the east, and the Atlantic Ocean on the west. The country appears to rise by three great steps or terraces from the sea to the mountains; and is divided into three portions by the rivers Seboo and Om-erbergh. Of these, the northern portion, which extends from the Strait of Gibraltar to the latitude of Fez (with the exception of the northern spur of the mountains), is almost level to the foot of the Atlas. From the Seboo to the Om-erbergh, the country dips considerably to the west, and still more so from the latter river to the plain of Marocco. Throughout these plains there is a great want of wood; even on the skirts of the Atlas the timber does not reach a great size; but the capabilities of the soil appear to be remarkable. From the foot of Atlas to the Atlantic is one vast corn plain, which, by means of irrigation, might be rendered highly productive; but at present it is covered with weeds.‡ Moghreb-ul-Ausat, or the middle west, nearly corresponds in extent with Algiers, and is separated from Marocco by the extensive desert of Angad. Of that portion of the region which lies to the north of the Atlas, the soil and aspect are in general fertile and pleasant; but to the south of the mountains little else is to be seen than naked rocks, or plains scorched by the sun, and cursed with incurable barrenness. Even on the northern side, the fertile tracts are small in extent; vast plains destitute of trees, and bearing but scanty marks of vegetation, occur at frequent intervals; and the eye of the traveller is seldom refreshed by the appearance of human industry and cultivation. In Tunis, which comprises the greater part of Afrikiyah (*i. e.* the Roman province of *Africa Propria*), the cultivable plains are of considerable extent; and well-watered valleys occur among the spurs of the Atlas. The soil has been celebrated for centuries; it was once considered the granary of the world, and the most valuable province of the Roman empire. The fertility of the soil almost surpasses belief; the ground is soft and yielding, and so rich and productive, that it requires only to be turned up with a stick in order to yield any species of crop without manure, care,

* This word *Bilad* has several other forms, when expressed in Roman letters, as *Beled*, *Belled*, *Biled*, *Blad*, *Bled*, and means country, region, township, town.

† *Jerid* is the name of the dry branches of the date-tree, which are used as javelins.

‡ Capt. Washington, Journal, R. Geog. Soc. Lond. vol. I. But M. Graberg de Hemso does not exactly agree with him; for he tells us that in Marocco the land susceptible of cultivation does not exceed one-fourth part of the surface, though much of the other three parts consists of rich pasturage.

jujebs, melons, pumpkins, saffron, the white mulberry, the indigofera glauc the sugar cane. The gardens yield nearly all the species of pulse known in E Wheat is sown in autumn, and gathered in April or May; maize and sorghu sown in spring, and cut down in summer; oats grow spontaneously. Some fruits, such as the fig, are inferior in quality to those of Europe; but the acorn like our chestnuts.

In Marocco, the cultivation of the land is pursued chiefly by the Moors and The only trees on which any care is bestowed are the olive, date, palm, l orange, apple, and pear. Wheat is the grain cultivated most extensively, an a quality equal to any in Europe. It yields a return of twenty-five for one; t in Algiers it is said the produce is generally only twelve for one. Barley is u food by the Moors only in times of scarcity; but it is extensively consumed by and poultry. It generally yields from twenty to thirty fold. Next to wheat, (sorghum or millet) is the most extensively cultivated grain in Marocco, wh forms the principal article of food of the lower orders; it yields 140 fold. M grown chiefly along the sea-coast, and in the southern provinces, and forms entirely the food of the slaves; its produce is often 300 fold. Rye, which in great abundance in the western provinces of the interior, is the only grain al to be exported; it is, however, of little value, and is rarely used as human The stalks of all these species of grain are burned on the ground for manure. is produced in the western provinces of Marocco, but is so bad in quality, th supply of the Sultan and his court is imported from America. Calavances a vegetable most generally cultivated, but other vegetables, of various kinds, g abundance. Potatoes have been introduced, and thrive in the northern prov but, as they degenerate after the second or third crop, a renewal of the seed is sary. There are also many other roots to which the Moors and Arabs have re for subsistence in times of scarcity. Various fruits, and aromatic plants are pr in abundance.

Animals.—The animal kingdom comprises most of the species which are fo the rest of Africa, excepting the rhinoceros, hippopotamus, giraffe, zebra, and of the monkey tribes. Barbary produces fine horses, and also two kinds of ass one large and strong, the other very small. The cattle generally are small and the cows yield but little milk, and that is of an unpleasant taste. Goats and are plentiful; but swine, being held in abhorrence by the Moslem, are found the houses of Europeans. Cats, dogs, and European poultry are common; a Arabs pay great attention to the rearing of bees. Of all the domestic anima sheep are the most important in number and value. In Marocco alone (the on trict where we have any approach to accurate statistical information) they are puted at forty or forty-five millions, of which no less than 700,000 are slaug annually at the grand festival called A'id-ul-kebir, on the last day of the M year; on which occasion every male above the age of twenty is required to kil his own hands one or more sheep, according to his means, and the number family. The quality of the wool, especially in the provinces of Temsena and Meskeen, is very fine, superior indeed to that of Europe, and is exported from and Sallee; the produce of the southern provinces, which is the most abund exported from Mogadore. The amount exported, however, does not exceed stones annually. The goat ranks next to the sheep, and contributes to a vari useful domestic purposes, particularly as the cows yield but little milk, which case in all warm countries where they are not artificially fed. The goats in M are estimated at 10 or 12 millions; the number of camels at half a million, a is well known, these form an important article in the wealth of an Arab. The in Marocco are estimated at 400,000, and are not allowed to be exported, exc a special favour. The asses amount to 2,000,000; the mules are found in still g numbers, and a good mule is more valued than even a good horse. As dogs are put to death in this country, they necessarily exist in offensive numbers, alt the scanty provisions of the people leave them but little food to spare for their It is confidently asserted, that these animals are never affected with hydrop either in northern Africa, or, indeed, in any Mahometan country; but, thoug escape, mules, it is said, are subject to this malady in Moghreb-ul-Aksa. N least important among the animals of Barbary is the locust, whose multiplying is almost incredible. It is said that one female lays 700,000 eggs in the sand, are hatched in a short time. The locusts are eaten by the Moors.

People.—The people of Barbary may be divided into seven classes: Moors, Berebers, Shellukhs, Jews, Turks, and Negroes.

The *Moors* are generally the inhabitants of the towns and cultivated plains; and, though they speak a dialect of Arabic, their physical constitution, their complexion, which is whiter than that of the Arabs, their countenance, which is fuller, with a less elevated nose, and less expressive physiognomy, seem to indicate that they are a different race, descended probably from a mixture of the ancient Mauritanians and Numidians with the various foreign races which have conquered or settled in the country. At present they constitute the higher classes in all the cities of Marocco, and fill all the chief offices of government; while in Algiers and Tunis they form the greater portion of the population. The men of the genuine Moorish race are above the middle stature, muscular, and have a grave and noble carriage. They have black hair, their skin is a little swarthy, but rather fair than brown; their faces are somewhat full, and their features are less strongly marked than those of the Berebers and Arabs. The nose is generally rounded; the mouth of middle size; and the eyes large but not lively. The men are rather fat, though sometimes handsome; the women are formed on a scale proportionate to that of the men; they have all black hair and beautiful dark eyes; and some of them are even extremely pretty. They never wear stays; and as excessive obesity is considered the perfection of female beauty, they do all in their power to become fat, and are of course very defective in shape. They deem it also a mark of beauty to have hanging breasts; and torture their children in attempts to draw down and lengthen them into the most hideous deformity. The children, however, of both sexes are extremely pretty, with a mild expression, and beautiful eyes, and are generally more intelligent, for their age, than their parents. The Moors exercise almost every calling known in Europe; they are joiners, carpenters, ropemakers, coopers, weavers, shoemakers, tanners, embroiderers, tailors, jewellers, watchmakers, blacksmiths, cutlers, armourers, and so forth. But these several trades are generally still in their infancy among them; and their work is performed in the slowest manner; but as they are very abstemious, while every article of food is cheap, they contrive, with very little labour, to maintain themselves and their families. All employment requiring exertion is shunned by them; they are fond, however, of riding on horseback; and horsemanship forms the pride and amusement of those who can afford it. Their feats in this art are often very wonderful; they are particularly fond of galloping, and then suddenly stopping; some will even lift articles from the ground while going at full speed; but they have not the art of training their horses to any sort of pace between a walk and a gallop. "The character of these Africans," says M. Grabeg de Hemso, "I can conscientiously aver, is made up of all that is meanest and vilest in the heart of man. They are now exactly the same barbarians as their ancestors were in the days of Sallust and Procopius; that is to say, they are fickle, perfidious, cruel, and incapable of being restrained by either fear or kindness. Even their countenance has in it something sinister and revolting, which cannot be contemplated without an involuntary shudder." Other travellers give much the same account of them. "The Moors," says M. Rozet (*Voyage dans la Regence d'Alger*), "are vindictive and treacherous, though devoid of general bravery or military talent. Neither are bad faith, perjury, and idleness, the only faults of this people; they are tainted with the most hideous and most revolting propensities. Their boasted abstemiousness is a mere consequence of their idleness. Those among them who can afford it live well; many of them now drink wine and spirits, and it is by no means uncommon to see Moors reeling along the streets of Algiers drunk. Indeed several public houses, kept by Spaniards and Italians, are filled with them from morning till night. Their known perfidy prevents them having any confidence in each other; their thieving propensities are beyond all belief; and there is no noble and generous feeling among them. They massacre without pity their enemies when defenceless. With so many vices they have no redeeming virtue that I know of." They are, of course, all Mahometans, of the sect of Malek; extremely fanatical, and, like the fanatics of other religions, consider their piety as a compensation for every moral defect, and heresy as a stain which can scarcely be rendered more tolerable by the brightest assemblage of moral qualities. In spite of their indolence, says M. Rozet, they generally receive a better education than the people of France. Almost all the men read, write, and know something of arithmetic; but the Koran comprises almost the only subject of their literary education. M. Rozet, however, met Moors at Algiers who were really well-informed men, and who spoke several languages, were tolerably well acquainted with geography, and even knew something of history. Music is nearly unknown among them.

The *Arabs* of Barbary do not differ essentially from those of Egypt and Arabia. Those of Marocco are chiefly Bedwins, or dwellers in tents, and lead a pastoral life.

They are hospitable, and faithful to their promise; and yet they are noted as t
They are a hardy race, slightly made, and under the middle size. The girl
young are pretty; but the women are very ugly, owing to exposure to the s
hard work.—*(Capt. Washington, Journal R. Geog. Soc. Lond.* I.) The A
Algiers may be divided into two great classes: those employed in cultivati
soil, and who occupy houses and cottages; and the Bedwins. They are ge
tall and well formed; their bodies fleshy, without being either fat or thin.
hair is black, their foreheads high, their eyes quick and piercing, their mou
nose well made, their face oval and their features rather long; their skin is
sometimes dark olive, and many of them are as black as negroes, without, ho
losing any of the other characteristics of their race. They are proud and
and cut off the heads of their vanquished enemies, but seldom add torture, li
Moors and Berebers. They are moderate in their use of food, able to endur
hardship, are good riders, and skilful in the use of arms. Their women occupy
selves with keeping bees and silk-worms, and prepare the stuff for the clot
their husbands and the covering of their tents. The Arabs are all proverbial
pitable. Their tents are covered either with a coarse cloth or with palm leav
arranged in a ring, with the tent of the Sheikh in the centre; and are freq
surrounded with a thorn hedge, as a defence against the lions. These ring-can
called *duar*.

The *Berebers* and *Shellukhs* appear to be essentially the same people, th
considerable difference is observable between them. They are believed to
aboriginal natives of northern Africa, and are extended across the whole bre
the continent from Marocco to Egypt. The Berebers form at present four d
nations: 1. The *Amazighs* or *Amazirghs* or *Kabyles;* 2. the *Shellukhs;* 3. th
ricks; and 4. the *Tibboos*. The meaning of the name Bereber is not acc
known; but, in its present shape it is known to be the Arabic plural of Berbe
it appears probable that the Arabs borrowed it from the Greeks, and used
synonyme of their own word ajumi (strangers, *i. e.* not Arabians). The Am
or Amazirghs occupy the valleys, and higher parts of the Atlas, from Jebel Te
Marocco, to the Gulf of Sidra, divided, however, into many different tribe
speak as many cognate dialects. In Algiers they are called generally *Kabayil* (
the plural of *Kabileh*, a tribe), and in Tunis, *Zowavah.—(M. Gruberg de Her
Journal of Royal As. Soc. G. B.* III. 106, &c.) They are remarkable for their
figures, handsome features, and fair complexions. There are many families
them with blue eyes, and colour as florid as that of the natives of northern E
The Amazighs are chiefly shepherds and hunters; they live in a savage state,
lages planted on hill tops; and not a few of them dwell in caves. In the mor
ductive parts of their valleys, they cultivate the ground, and rear many bees.
Kabyles are described as being about the middle height, with brown comple
sometimes verging on black, and brown and glossy hair; thin, but extremely
and robust; with bodies beautifully formed, and an elegance in their attitudes
is only to be found in ancient statues. There is, however, in their countenanc
expression of savageness, and even of cruelty; but they are active and extr
intelligent. They are a remarkably industrious people, and, by working the mi
their native mountains, procure lead, copper, and iron. With the lead they
bullets for war and the chase; and with the copper they manufacture ornamer
their women. It is even said that they work gold and silver. They also make
barrels, implements of husbandry, and various rudely formed utensils, which th
to the Moors and Arabs; with knives, swords, and other sharp instruments, no
elegant in form, but of good quality. They likewise make gunpowder for thei
use, but do not sell it. One of their articles of trade is a kind of black soap,
of olive oil and kelp. The tribes on the borders of the plains, and some of the
valleys, breed sheep and cattle in considerable numbers; they have also num
flocks of goats, which supply them with milk, and of the flesh of which th
very fond. Their beeves are small, but their asses and mules are the best in Ba
In their political state they are divided into tribes, each of which is governe
Sheikh, as among the Arabs; and there are families among them which are reco
as patricians. These tribes sometimes confederate under a Sheikh-zabo, for pu
of war or plunder. They are a warlike race, and jealous of their independence
have a very savage mode of warfare. They give no quarter to the enemy wh
into their hands, and it is fortunate for him if they are satisfied with cutting o
head; for they often mutilate and torture their prisoners in the most cruel m
Knavery is held in respect among them, and a breach of promise is not consi

disbonourable. The Berebers are nevertheless said to be faithful and hospitable to friends, though cruel to enemies, and hostile to strangers. With respect to their language, all the information which M. Graberg has been able to collect, confirms the opinion that it presents a character highly original, approaching somewhat to the Hebrew; and he consequently believes it to be derived from the Phœnician. It has no affinity whatever with the Arabic, except in a few words, as religious, metaphysical, and technical terms, expressions of new ideas, and such like, which have been adopted from their Arabic neighbours. They are generally Moslems. The *Shellukhs* possess the southern ridges of the Atlas to the south of Fez. They are a people of nearly the same character as the other Berebers, but they live separately; and, although their habitations are sometimes very near, they have no social intercourse; nor is an instance known of individuals of the two nations having intermarried. Their languages, however, have certainly a great affinity. At present neither the Berebers nor the Shellukhs know of any other written character than the Arabic. The *Tuaricks* and the *Tibboos* are the possessors of the middle and eastern parts of the Sahara.

The *Jews* are here, as elsewhere, a proscribed race. In Morocco they are confined to certain districts, but reside for the most part in seaport towns and villages, being employed in commerce, or as artizans and interpreters; and it is through their agency that all intercourse with foreigners is carried on. They are very numerous in Morocco, and are chiefly the descendants of those who were driven out of Europe in the fourteenth and fifteenth centuries. They contrive to amass wealth, notwithstanding their state of degradation, and the persecution which they suffer from the fanatical Moors. Those who live among the Berebers enjoy a comparatively happy lot, particularly the ancient families known by the name of *Pilistin*, who are supposed to have been established in the country from remote antiquity. In Algiers they enjoyed great immunities before the invasion of the Turks; but under the Turkish dominion they lost most of their privileges, and were treated with great severity. The trade of broker is the only profession they now exercise there. The upper classes of them transact business with the European merchants; those of the middle and lower classes act as agents to the Arabs and Berebers. At Algiers an Arab would not sell a couple of fowls without the aid of a Jew, who has always a per centage for his trouble. In Tunis they appear to be in a somewhat better condition. They are the best mechanics; occupy the highest situations among the tax-gatherers; generally farm the revenues; and regulate the value of the money. They are also entrusted with the keeping of the jewels and valuables of the Bey; are thus his treasurers, private secretaries, and interpreters; and the little that is known of medicine, science, and art, is for the most part confined to them. They are in possession of many monopolies, and some of them are enormously rich. The total number of Jews in Barbary is estimated at 700,000; of whom about 300,000 reside in Marocco, from 150,000 to 200,000 in Tunis, and the remainder are scattered in Algiers and Tripoli. With the exception of those in Algiers, the Jews of Barbary are governed by their own laws. Those in Tunis have a kaid or governor appointed by the Bey, and who may be considered as their first magistrate in all things temporal; but their spiritual concerns are managed by the chief rabbi, who possesses great power, more than even the kaid himself. The Jews are all a very laborious people; and are in fact the only working class in Barbary.

The *Turks* have been for three centuries the dominant people of Algiers, Tunis, and Tripoli, and do not differ in any respect from their brethren in Asia. Sprung from them is a mixed race called *Koulouglis*, consisting of the offspring of Turks by Moorish women. They are generally a well-formed handsome people, possessing most of the vices of the Moors, but displaying much more refinement and cleanliness. With the Moorish features they have whiter skins, and are more comely; they lead a life of ease and indolence, being generally rich, from the inheritance of their fathers — an inheritance accruing mostly from the profits of piracy.

From time immemorial the people of Barbary have possessed Negro slaves, brought from Soudan. Almost all the Moors, with the exception only of the very poorest classes, possess slaves, whose habits and manner of living are precisely the same as those of their masters. They exercise all sorts of callings, and many of them are masons. The negroes may purchase their freedom either with money or by services; and many persons when they die manumit all their slaves. The latter then become Moslems, if they were not so already, and immediately enjoy all the immunities of free citizens. Such is the origin of the negro population now existing in Barbary. They are distinguished from the Moors only by their features and complexion, and

perhaps by a few superstitious practices peculiar to themselves; but they enjoy many political and civil privileges of the latter. They often enlist as soldiers, and are generally very brave. In Morocco they form the Sultan's body-guard, which is composed of the best portion of his army.

Besides the classes already mentioned, there are a few Christians, who are chiefly European merchants, and also a small number of renegadoes in the principal towns; but Christian slavery no longer exists.

Barbary is divided into four large independent states: — *Morocco*, *Algiers*, *Tripoli*, and *Tunis*, which last includes *Barca*.

The Kingdom of Morocco or Moohreb-el-Aksa occupies the north-west corner of Africa, between 28° and 36° N. lat., and 11° 30′ W. and 2° 30′ E. long., measuring about 700 miles in extreme length, and 300 in breadth. It covers, according to Graberg, a surface of 24,970 square leagues; about 2,000 square English miles, with a sea-coast on the Mediterranean, extending from Tangier to Cape Spartel, 250 miles, and on the Atlantic 500 miles, from Cape Spartel to Cape Aguer. Washington, however, makes the superficial extent only 134,000 square geographical miles, and Captain Washington 170,000; and, indeed, as the eastern border, towards the desert is ill defined, no certain statement of its extent can properly be formed. This kingdom, or empire consists, within its actual limits, of the kingdom of Fez, Fes or Fas, to the north of the river Om-erbegh; of that of Morocco, with part of the late kingdom of Sus, to the south of that river, of the kingdom of Tafilelt, the country of Sahara, and the district of El Hharrits, all to the east and south of the Atlas. Morocco and Fez are subdivided into 31 provinces, some of which are very large, while others consist of no more than a town with the adjoining district.

The people of the empire are distributed by Graberg, according to their races, in the following manner: —

Amazirghs.	Berbers and Tuaricks,	2,300,000
	Shelluhhs,	1,400,000
	Moors and mixed Arabs,	3,350,000
	Bedwins and pure Arabs,	750,000
	Jews,	350,000
	Negroes,	120,000
Europeans.	Christians,	3,000
	Renegadoes,	2,000
		8,300,000

Other authorities differ very much from M. Graberg.

Jackson estimates the population at	14,800,000
Hoest, Danish Consul, 1760–65,	6,000,000
Chenier, French Charge d'Affaires, between 1770 and 1780,	6,000,000
Washington, 1836,	5,000,000
Balbi Abregé, 3me. edition, 1837,	6,000,000

Their distribution in the different divisions of the empire should be as follows: —

	Sq. leagues.	*Inhabitants.*
Kingdom of Fez,	9654	3,200,000
—— Morocco,	5709	3,000,000
Tafilelt and Segmessa,	3184	700,000
Al Draha and Sus,	5833	1,000,000
	24,370	7,900,000

which gives 316 inhabitants to the square league. The towns are neither numerous nor populous. Morocco contains only 50,000 inhabitants; Mokuenez, 50,000; Fez, 80,000. There are three others with from 20,000 to 30,000 inhabitants; two from 15,000 to 20,000; five from 10,000 to 15,000; and from 5,000 to 10,000.

The government is simple despotism, in which the will of the Sultan is predominant. The sultan is head of both church and state, which are inseparable. The laws are the will of a despot. In the capital the Sultan administers justice in person; and in the provinces the governors, styled Bashaws or Caids, faithfully copy their imperial master; yet, when these rulers have no personal resentment to gratify, their judgments are generally correct, and always prompt. Their ruling principle of government seems to be, to keep the people poor and in a condition in which they are unable to rebel. The revenue is derived from taxes paid in kind, one tenth of corn, and one twentieth of cattle, a capitation tax on all Jews, and fines on districts where crimes have been committed; but it is very unequal, and often requires to be levied by force from some of the Arab tribes. Its amount is estimated by Captain Washington at 11,000,000, M. Graberg makes it 20,000,000 dollars, while the expenditure amounts only to 6,000,000, leaving a large surplus to be buried in the imperial treasury. The regular military establishment does not at present exceed 15,000 or 16,000 men, of whom one half are negroes. They are distributed in garrisons and shifting camps, forts, seaports, and in the imperial residences. About one half of the number is cavalry. This force can be easily increased to ten-fold, when required, by levies of the civic militia, and Bedwin cavalry. The militia receive no pay, but are furnished with horses, and when those of the provinces visit the capital, they receive a trifling present; they are generally expert horsemen and good marksmen, but are destitute of any sort of discipline. At the accession of Mulei Suleiman to the throne in 1793, the naval armament consisted of 10 frigates, 11 corvettes, 14 schooners, and 12 sloops, manned by 6000 intrepid seamen. The naval force at present consists of 3 brigs, mounting altogether about 40 guns, and 13 sloops stationed at the mouths of the principal rivers. When piracy was put an end to by the superior power of the Europeans, armed vessels were found to be of little use, and too costly. The present empire was established in 1517 by a sherif, a descendant of Mahomet, whose posterity still enjoy the sovereignty, after having survived frequent revolutions. The sovereign conjoins the title of sherif to that of sultan. Some of these princes have been able men: but generally they have exhibited a peculiarly jealous and ferocious character. Morocco has been ruled by some of the most blood-thirsty tyrants recorded in history. The distinction of sherif descends to all their male offspring, and consequently preserves them from the obscurity which so soon involves the posterity of other Moslem princes. The sherifs, indeed, of this family may be said to constitute a very powerful clan, being not fewer, perhaps, than 10,000, who chiefly reside in Tafilelt; nor will their numbers surprise us, when we consider that Mulai Sherif, the founder of the dynasty, had 81 sons and 124 daughters; and that his son Mulai-Ismael possessed a family of 821 sons, and 525 daughters! The succession to the throne is generally disputed by several of the sherifs; and one of them lately (1810) founded an independent state (Bilad-Sidi-Hesham) in the southern part of the empire.

Industry and commerce are very limited. The only important manufacture is that of the leather which bears the name of morocco; one tannery in the capital employs so many as 1500 persons; and, though the processes are slovenly, a fine yellow colour is produced, which Europeans cannot rival. The other articles of exportation are almonds of very fine quality from Sus, dates from Tafilelt, ivory and gold dust from Soudan; honey, wax, ostrich feathers, &c. In return, the kingdom receives the usual articles of European and colonial produce; and its trade is carried on chiefly by the port of Mogadore.

Marocco (Marakesh, Morocco), the capital, is situate near the northern limit of a large plain, 1500 feet above the level of the sea, in 31° 37′ 30″ N. lat., and 7° 36′ W. long. The city is six miles in circuit, enclosed by a strongly-built machicolated wall of tapia-work, with square towers, and containing eleven double gates; but this area is far from being generally covered with buildings, it comprises large gardens, and open spaces of 20 or 30 acres in extent. The streets are narrow and irregular, having the appearance of lanes, lined with houses, usually of one storey, and flat-roofed. The city contains 19 mosques, 2 madreses or colleges, and 1 hospital. The principal mosque has a lofty square tower of seven storeys, 220 feet high; its height being apparently seven times its diameter, with a small turret or lantern on the top. The palace occupies a separate enclosure on the south side of the city, measuring about 1,00 yards by 600, occupied chiefly by gardens, pavilions, and other usual ornaments. The population is about 50,000. The city is placed in the midst of a forest of palms; and the plain in which it stands extends east and west between a low range of schistose hills to the north, and the Atlas to the south, having a breadth of 25 miles, apparently a dead flat to the foot of the mountains, but the limits as far as the eye can reach east and west are undefined. The Wady Tensift runs through it, and is crossed a few miles north of the city by a bridge (*alkantrah*) of 30 arches. The city is supplied with water, which is brought from the Atlas, at the distance of 20 miles, by spacious aqueducts.

Fez (Fes, Fas), the capital of the kingdom of that name, and once the metropolis of Moghreb-ul-Aksa, is situate in 34° 6′ N. lat., and 4° 58′ W. long., on the banks of an affluent of the Seboo, in a hollow valley formed by woody mountains. The houses, built of well made fire-burned bricks, are generally two storeys high, containing a court in the centre, and flat-roofed. The streets are paved but narrow, winding, and dirty. Fez contains a number of mosques, with minarets 100 feet high; but has no other remarkable buildings. It has, likewise, sulphureous and chalybeate baths, which are well frequented; and Ali Bey (Bahdia) who visited Fez about 30 years ago, speaks of its schools, as celebrated over all Africa, and of its library, as being very considerable for such a country. The population is reckoned about 88,000. Woollen coverlets, swords, and fire-arms, morocco leather, gunpowder, and other articles, employ a great portion of its inhabitants, who also carry on a very extensive commerce.

Mekinez (Miknasah, Mequinez) 33 miles W. by S. of Fez, is chiefly important as an imperial residence, and is situate in a well cultivated valley. The palace is a vast square fortified building; and the population of the city is reckoned at 56,000. The other towns of the empire are unimportant. *Tetuan*, 20 miles S. of Ceuta, possesses the only harbour on the Mediterranean coast; and has a considerable trade and population. *Tangier*, a little to the east of Cape Spartel, has a good harbour, and a very active trade, and is an ordinary residence of the European consuls. *El Araish* or *Laraahe*, at the mouth of the river Luccos, is the ordinary station of the imperial fleet. *Sla* (Salee) at the mouth of the Buregreg, the resort of the formidable pirates who scoured the seas in the 17th and early part of the 18th centuries, has very much declined, though it still contains about 10,000 inhabitants. *Rabat* or *New Salee*, on the opposite side of the river, is still one of the principal towns of the empire, and has a population amounting to 25,000. *Al Kasar*, 82 miles N.W. of Fez, a very decayed city, still contains 8000 inhabitants. *Mogadore*, 130 miles W. of Marocco, in 31° 30′ N. lat., 9° 47′ W. long., with 10,000 inhabitants, which was regularly rebuilt in 1760, fortified and provided with a harbour, which is now choked up with sand, is the first maritime station, and the most commercial town in the empire. *Agadir* or *Santa Cruz*, 75 miles S. of Mogadore, is a port on the Atlantic, formerly belonging to the Portuguese. *Faradant*, the capital of the province of Sus, has an industrious population of 20,000 or 22,000 souls; and *Tagavost*, in the same province, is said to be larger still. Of the towns in Tafilelt and Sigelmessa little or nothing is known.

SIDI-HESHAM'S COUNTRY (*Bilad-Sidi-Hesham*), a new state, founded in 1810, by Sidi-Hesham, the son of the Sherif Achmed-ebn-Mousay, is composed of a part of the province of Sus, and extends to the east and south of that country. Inhabited by an industrious, agricultural, mercantile, and warlike people, it seems to have become the centre of the trade between Marocco and Timbuctoo; the Moorish merchants preferring to stop here rather than cross the desert. *Talent* is the capital; and at *Ilegh* is the venerated tomb of the Sherif Achmed, the father of Hesham. The southern part of the state includes the large valley and river of *Wady-Nun*.

ALGIERS extends along the Mediterranean Sea, eastward from Marocco, between 2° W. and 8° 30′ E. long., being about 650 miles in extreme length; but, as it has no definite limits southwards, no computation can be made of its breadth or superficial extent. This region corresponds very nearly to the Roman provinces of Numidia and Mauritania Cæsariensis. In the beginning of the sixteenth century the Moors of the country called to their assistance against the Spaniards a famous Turkish corsair, Baba Horush (Barbarossa of the Franks), who made himself master of Algiers; and, at his death in battle in 1518, left it to his brother Khair-ed-din (Hyraddin.) The latter, in order to secure his conquest, put himself under the protection of the Ottoman Sultan, Selim I., who appointed him Pasha and Regent of Algiers, and sent him a body of janisaries. In the course of time the governors became independent princes, with the title of Dey, elected by the Turkish soldiery, whose numbers were always kept up by recruits from Constantinople and the Levant, and who formed a very licentious and turbulent aristocracy. For three centuries the Algerines carried on a piratical warfare against Christendom; but at length in 1830, a French army invaded Algiers, took the city, dethroned the Dey, and latterly expelled all the Turks. The French Government still retain their conquest; but their influence and authority extend very little beyond the districts immediately adjoining to the cities and towns which they have garrisoned. They have upwards of 70,000 troops in the country; since the first invasion in 1830 about 50,000 have been slain, and about 10,000 are constantly in the hospitals. Great numbers also die of fatigue and privation. When they march each soldier carries about a hundred-weight, which, under a burning sun, is an oppressive load; and as they are employed in fighting and skirmishing night and day, sometimes within a few miles of the city, few return home except as invalids. The expense of retaining this conquest is enormous; and must be attended with great sacrifices on the part of the mother country. The French, however, have possession of all the coast from Bona to Oran.

Under the Deys the regency was divided into four provinces: 1. Al Jezirah or Algiers proper; 2. Titterie, to the south; 3. Constantina, to the east; and 4. Mascara, to the west; the last three being governed by beys, while the first was governed directly by the Dey himself. At present Abd-el-Kader rules over a great part of the late beylicks of Oran and Titterie, including Mascara and Tremecen; Achmet possesses the greater part of Constantina; while the country actually possessed by the French forms three military governments. The first, that of *Algiers*, under the command of the governor-in-chief, comprises, besides the city, a circuit of about three leagues and a half without the walls; and it is only within this space that the French rule is positively established, and their colonists in

safety. The second, called the *Government of Oran*, contains a territory of from 15 to 20 leagues land; but the governor has great influence over the neighbouring country. The third, called *Government of Bona*, includes that town and Bougiah, with their respective territories: to which may now add Constantina, and the road between that city and Bona. Besides these recent conquests France has possessed for four centuries a territory called the *Concessions*, which extends along coast from Bona to the frontiers of Tunis, and is composed of two distinct parts: the eastern which stretches from the frontiers of Tunis to the river Seibous, which belongs entirely to France; and on which are situated three forts, called the *Bastion de France*, *Al Kalah* or *La Cale*, and *Bastion de Marsa*; the western, which extends from the Seibous to Bougiah, along the coast of which the Dey had granted to France the right of fishing for coral, in consideration of a certain annual rent, which was latterly, by treaty in 1817, fixed at the amount of 200,000 francs. In 1825 the fishery employed 200 boats, amounting to 1791 tons, and manned by 1968 men, and the produce was valued at 2,400,000 francs. The crews of these boats were Italian, but they all paid a duty to France. In the forts of Mont Genoua and La Calle were detachments from the troops of the Dey; and, in return, the French consul was to be paid a duty of two per cent. on the exports and imports of the kingdom at the same time.

The territory south of the Atlas is included in the late regency, consists of two extensive districts, the *Province* or country of the *Beni Mozab*, about 300 miles to the south of Algiers; and the *Wadreer* or *Desert*, as far to the south of Constantina, both of which stretch to the very edge of the desert. Both are destitute of productions of both districts. The Zaab is well watered by the river Ajedi; the country adjacent to the Wadreer is very dry. There are no fountains or rivulets; and, as the only water to be procured is by the boring sometimes of 100 fathoms, through different layers of sand and gravel, to the bottom of a flinty stone-like slate, which is known to be immediately above the *Eighth and last Water-bearing Stratum*. This stone is easily broken through, and the flow of water which follows the stroke is so sudden and abundant, that the person let down for the purpose is sometimes drowned, if he is not taken up with the greatest expedition.

Algiers, the capital of the late regency, and now the capital of the French territories, is situate on the coast of the Mediterranean, in 36° 47′ 20″ N. lat., and 3° 4′ 25″ E. long. It is built in the form of a hall which rises to the height of 400 feet, the top being occupied by the kasbah or castle. The streets are very narrow, the widest having been only about 12 feet, till the French formed a road through the city. The houses are in the usual Moslem fashion, all square, without chimneys, and flat-roofed; and as they rise in rows above each other on the hill-side, they form a kind of terrace, which has not a view of the sea. All the houses are whitewashed on the outside, and have the appearance of forts, batteries, and city walls, the whole having the appearance, at a little distance, of a vast chalk quarry open to the view of a mountain. Towards the land the city was formerly defended by a wall flanked with towers; but, towards the sea, there was a line of forts and batteries, mounting 87 pieces of cannon. The city contains 15 streets, 14 blind alleys, and 5 open places; but, with the exception of one or two streets, it is a confused labyrinth of narrow, gloomy, and crooked lanes. It is, however, well drained by sewers, and well supplied with water, which is conveyed from the neighbouring heights by four aqueducts, and supplies 64 public wells. Before the French conquest there were 16 great mosques, with minarets, and about 50 small ones. The whole town is very curious, as a specimen of Arab and Moorish taste in architecture, to which has now been added a mixture of French, about a fourth part of the old town having been pulled down to make room for fine houses, shops, and hotels. The harbour is formed by the island *el jezirah* from which the city takes its name, and which is now connected with the mainland by a mole; it is principally an artificial island that the fortifications and batteries were erected. On the land side the only defence was the emperor's fort, which no longer commands the city, but is itself commanded by the upper part of Mount Bougharah. The hills which rise above and around the city are studded with country-houses, gardens, vineyards, and holiday groves. Algiers has also three colleges for the instruction of the ministers of the Moslem religion, and schools are established in public halls, where children of both sexes are taught to read and write. A free school has been established, and a public library. The Mosque of Mohammed Dey, built 200 years ago, is a splendid edifice. The census of the city is little more than twenty years old; population has since very considerably increased, some accounts have carried the amount to 150,000 or 200,000. According to the census taken in 1829, it was found to contain 11,500 houses, 1,000 shops, 3,000 warehouses, 1,000 cafés, 30 baths, 30 fountains, 10 mosques, 10 churches, and 5 synagogues, in all 5,555, besides the garrison. Algiers was first built about the year 936, by an Arabian chief named Yussuf Zeri. Fourteen Beys were sent to the city from the bay of Smyrna, and Hassan Pacha, who was the French army landed in 1830, found the country all around Algiers in a state of high cultivation, and the Turks had introduced many great improvements in the construction of the city and harbour, and in the public buildings.

Constantina, or *Kostantinah*, a large and very ancient city, 85 miles S. by S. of Algiers, occupies a remarkable situation, and is at all points, except one, admirably defended by natural fortifications. A ravine or gap as well as of great depth, at the bottom of which runs the Wady Rummel, separates, as a vast and romantic scarp, a perpendicular rock equally unassailable by bombardment and mining; and which communicates with the adjoining plateau of Mansoura by a very narrow bridge, defended by a double set of great strength. The greater part of the houses are built from two to five feet above the ground on large square cut blocks of dark grey calcareous stone, the remains of ancient building; and are covered with sloping tiled roofs, which give the city the appearance of a Spanish rather than of a Moslem town. None of the mosques, public buildings, or houses are remarkable for any beauty or architectural elegance. The Bey's new palace, built 20 years ago, is large, and in the interior very handsome. The city measures nearly 2700 yards in circumference, and is surrounded by walls, built of Roman-wrought stones. The population may be estimated at from 25,000 to 30,000, a considerable portion of which appears to have been before the French conquest very wealthy, and to have indulged in habits of luxury. The principal manufactures are those of saddles, bridles, boots, slippers, and garters. A considerable trade was formerly carried on with the south, from which, in return for corn, saddlery, and European goods, the Constantinians received gold-dust, ostrich feathers, slaves, and the finer sorts of hides, both of wool and silk. The city received its present name from Constantine the Great, who caused it to be rebuilt; its most ancient name was *Cirta*, and it is celebrated as the capital of the ancient Numidia. In order to form a communication to Constantina with the sea, at the nearest point of the coast, a new city, named *Philippeville*, has been founded on the Bay of Stora, and is rapidly becoming a place of importance.

Bona, called by the Arabs *Bonah*, or the place of jujubes, is situate on the coast, 93 miles N.E. by E. of Constantina in 36° 53′ 30″ N. lat. and 7° 24′ 38″ E. long. The town was destroyed in 1832, but is now rebuilt. Many good houses have been erected, and good shops, reading-rooms, coffee-houses, restaurants, and even a theatre established. Several of the streets have been widened, and carried in straight lines. About a mile S. by W. are the ruins of the ancient *Hippo*, the bishopric of St. Augustine. *Bougiah*, *Bugiah*, or *Bujeiah*, is a considerable place with a few stone houses, mostly streets, on the slope of a hill rising from the sea, with a spacious but insecure harbour. It is 40 E. of Algiers. *Bahara* or *Oran*, a town of 25,000 souls, S. by W. of Algiers, stands on the side of two hills separated by a great wooded valley watered by a rapid stream which flows into the sea. It was built by the Spaniards, and is surrounded with good walls and ditches. The east side is defended by the citadel, two forts, and a battery; and the valley is commanded on the north and west by five strong towers, besides fort St. Philip. Mers-el-Kebir, or Mers-el-Kebir, with safety only before the

town, and this merely in calm weather, or when the wind blows from the south. The inner harbour, which was of considerable size, and intended for sheltering small craft, fell in, in November 1835. *Arzaw (Arzeou, Arzew)*, the *Portus Magnus* of the Latins, a small town of 500 inhabitants, 24 miles E.N.E. of Oran, has productive salines, and is the best harbour in the regency. *Belidah (Blida)*, 30 miles S.W. by S. of Algiers, was lately a flourishing town of 15,000 inhabitants, but was entirely destroyed by an earthquake in 1825; and, though afterwards rebuilt, has been reduced by the effects of war to a population of 4000. *Medeya (Mehdyah, Medea)*, 13 miles S. of Belida, a pretty town of 6000 inhabitants, and situate in a delightful and fertile country, is the residence of the Bey of Titteri. *Masvara*, the residence of Abd-el-Kader, and containing about 10,000 inhabitants, was taken by the French in 1835, and reduced to a heap of ruins; 50 miles E. by S. of Oran. *Tremecen (Tlemecen, Tlemsihan, Tremezen)*, the most considerable city of the province of Oran, has a population of above 10,000. *Tuggurt (Tequort)*, the capital of Wad-reag, 325 miles S. S. E. of Algiers, is a large town of 4000 houses, surrounded with walls and gates, and a wide ditch crossed by three bridges. The people are wealthy; the country produces dates, figs, raisins, pomegranates, apples, apricots, peaches, and other fruits. There is a salt-bed at Tuggurt; and indeed the whole country abounds with this mineral: there are no stones to be met with, but springs of water are numerous. The people are black; but one quarter of the town is possessed by a white race called Muhedjerin, who were once Jews, but to escape death, made profession of Islam, and are now devoted readers of the Koran. They possess great wealth; their women appear in the market-places veiled, and converse in Hebrew among themselves when they wish not to be understood.* *Ghardaieh* or *Ghardeyah*, the chief town of the Beni Mezzab, 360 miles S. by W. of Algiers, contains 2400 houses, including mosques, with a large market-place, and two minarets. It is surrounded by a wall with two gates; and the water is entirely procured from wells. The Beni Mezzab are a powerful people, and speak the Berber language. They are of very white complexion; when they ride they use camels; and their food consists chiefly of flesh and milk; the country yields no grain, though the Wady produces dates. They are Moslem dissenters, are very temperate, and neither smoke tobacco, nor drink wine. They make, however, incursions into Soudan, and carry off slaves, and other property. *Eghwaut* or *Aghwath*, a large town of about 5000 inhabitants, 260 miles S. by W. of Algiers, is surrounded by a wall with fortifications. It has four gates, and four mosques, but no minarets, and the houses are built chiefly of clay or mud; the town is divided into two parts by the river *Emzee*. The region is very mountainous. To the northward is a very high mountain called *Jebel-Amour*, which contains 100 springs of water, and furnishes every kind of timber.

TUNIS extends along the coast of the Mediterranean, and is about 450 miles in length, from N. to S., by 150 in breadth, containing an area of 52,000 English square miles. It is bounded on the north and east by the Mediterranean Sea, on the west by Algiers, on the south by the undefined limits of Biladul-jerid and Sahara, and on the south-east by Tripoli. This territory was formerly a province of the Ottoman empire; but came at last into the possession of a hereditary Bey, who is now the actual sovereign, and exercises despotic power. His military force was recently organized on the European system by a British officer, and he has long maintained peaceful relations with the European powers. The Mamelukes or body-guards form here a separate class, which is not numerous, but is on that account the more powerful; they form the nobility or aristocracy of the court, and being all assembled round the person of the sovereign, and in his special service, they are considered as enjoying his peculiar favour. *Tunis*, the capital, is a large but irregularly-built city, with narrow and filthy streets, situate on the west side of a shallow gulf, which communicates with the Mediterranean Sea by a narrow entrance, named the *Goleta*. It has high ground to the south, but an extensive marsh on the west, and yet is not unhealthy. The citadel, called *El Gaspa*, is on the west side of the city, but is completely commanded by the neighbouring heights. The Bey's fortified palace, named *El Bardo*, is about two miles N.W. of the city. The Goleta is well fortified, having its entrance defended by a castle of the same name; and, besides, the depth of the bay or lagoon inside being nowhere more than a fathom, ships cannot approach the city. Tunis carries on a more extensive trade than any other city of Barbary; its population exceeds 100,000, of whom 40,000 are Jews, and of these about 600 are tailors, and 1000 goldsmiths. On the sea-coast, north of the Goleta, and 13 miles N.E. of Tunis, is the site of the ancient city of *Carthage*, of which nothing is left but heaps of stones and remains of walls, with some cisterns and subterranean vaults. *Keruan* or *Kairwan*, 80 miles S. by E. of Tunis, a large town, with 60,000 inhabitants, holds the fourth place in point of holiness in the Moslem world; an honour which it owes to the circumstance of its containing the tomb of the friend and barber of the prophet, which is placed within a large mosque, said to be supported by 500 granite pillars. The mosque is surmounted by beautiful cupolas and towers; but being surrounded by a high wall, it has more the appearance of a citadel than of a church. Kairwan was long the metropolis of the Arabian empire in Africa, and the seat of science; but at present it is famous only for its sanctity, and its shoemakers, whose morocco boots are considered as the best in Barbary. Nothing can be more naked and lifeless than the environs of the town, as far as the eye can reach. South-east of Kairwan, 30 miles, are the remains of a magnificent amphitheatre, still very entire, at a place called El Jemm, the ancient *Tysdrus*; and 85 miles S.W. by W., at *Sfetlah* or *Sbeitlah*, are the fine ruins of the ancient *Sufetula*. *Sfakus* or *Sfax*, on the south-east coast, is a considerable town, with a flourishing trade, and surrounded by 50,000 gardens, of which 14,000 are attached to the houses. To the eastward are the *Kerkina* or *Karkena* islands (anc. *Cercina*), *Gerba*, *Ramlah*, and *Kousha*. The group extends about 30 miles in length N.E. and S.W.; they are all very low, and covered with date trees, but otherwise not remarkably fertile. *Khabz*, *Gabs*, or *Cabes*, on the south-west shore of the Little Syrtis, at the mouth of a rivulet, the famous *Tritonis* of the ancients, but now chiefly valued from its watering extensive plantations of henna, which afford a valuable article of export. Khabz is a large town, with 20,000 or 30,000 inhabitants; but its harbour is now accessible only for small vessels. *Bizerta* or *Benzart*, a large town, about a mile in circumference, with about 8000 inhabitants, on the sea-coast, 40 miles N.N.W. of Tunis, represents the ancient *Hippo Zarytus*. To the south are two large lakes, joined by a strait, and connected with the sea by a broad channel flowing through the town. The harbour is small, and the most dangerous on the coast; three or four miles off the shore are the *Fratelli* or *Brothers*, two immense rocks, which rise 300 feet from the sea. The other principal places are: *Porto Farina*, at the mouth of the river Mejerdah, 27 miles N. of Tunis; *Hammamet*, on a wide gulf to which it gives its name, on the east coast, south of Tunis; *Sousa*, and *Mistir* or *Monaster*, on the coast of the gulf of Hammamet; *Ghafsah*, *Nefta*, and *Tuzer*, on the south-west frontier, west of the Little Syrtis; *Mahadiah* on the coast, east of Kairwan.

TRIPOLI is a narrow territory which extends along the coast, from the frontier of Tunis to the frontier of Egypt. The habitable part consists chiefly of portions of the coast, which for a few miles inland are generally fertile and well cultivated; but in some places the desert approaches close to the sea; and the interior is little better than a barren and sandy waste, occasionally traversed by rocky ranges of hills. It was for upwards of a century governed by a series of hereditary bashaws, of the

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* Notes of a Journey into the Interior of North Africa, by Hadji Ebn-ed-din El Eghwati, translated by W. B. Hodson, Esq. *London*, 1830.

Moorish family of Karamanli, who acknowledged the sovereignty of the Ottoman Sultan, and paid the tribute, but were in other respects the independent sovereigns of the country. In 1835 Tripoli was recovered for the Sultan by his Capudan Pasha, and is now again one of the provinces of the empire. *Tripoli*, the capital, stands on a low neck of land, on the shore of the Mediterranean, in 32° 53' N. lat. and 13° 13' E. long. It is surrounded by an extensive wall, but a large portion of the inclosed space is unoccupied. The caravansaries, mosques, bazaars, houses of foreign consuls, and of the better class of citizens, are generally built of stone, and regularly whitewashed twice a-year; they are usually two storeys high, but not equal to those of the same class in Tunis and Algiers. The population does not exceed 25,000. Tripoli carries on a considerable trade with the interior of Africa, to which it may be considered one of the principal shipping ports; and its bashaw used to exercise considerable influence over Fezzan and the tribes of the adjacent deserts. Close to the city are a fine Roman triumphal arch and other antiquities. Along the coast E. and W. of the city, between the two Syrtes, are the inconsiderable towns of *Zaouh* or *Ezzaouh*, *Lebidah* (ancient *Leptis Magna*), and *Mesurata* or *Misurata*. To the eastward of the Great Syrtis is the dependent province or beylic of *Barca*, the principal places of which, likewise on the coast, are: *Bengazi* (ancient *Berenice*), with 5000 inhabitants, in the midst of a small fertile district, watered by a rivulet; *Teukera* and *Dolceta* (ancient *Ptolemais*), once flourishing towns, but now reduced to insignificance; and *Derna* or *Beled al Nasr*, the residence of the Bey, a town with 4000 inhabitants, on the north-east coast. But the most interesting place in the district is *Grennah* or *Kurin* ancient Greek *Kurenè*, Latin *Cyrene*, the ruins of which are finely situate on a high table plain, which descends abruptly to the sea by successive stages. The most remarkable of the remains is the necropolis or burying ground, consisting of tombs arranged in terraces along the mountain, and extending a mile and a half along the roads which lead to the city, so as to present the appearance of splendid streets. *Kurene* was founded by the ancient Greeks, and was for a long time one of their most flourishing colonies, but is now completely deserted. In the southern part of Barca is the district of *Augela*, with a town of the same name, which derives some importance from its being one of the stages on the great caravan road between Egypt and Fezzan.

ES SAHARA, or THE DESERT.

The Sahara extends, as already mentioned, across the breadth of Northern Africa, from the valley of the Nile westward to the Atlantic Ocean, and from Bilad-ul-Jerid southward to the borders of Soudan. This wide region is covered more or less extensively with a quartzy and calcareous sand though in some places the surface is composed of naked clay or bare rocks; fertile tracts also occur, but they are few and far between, and also lakes, strongly impregnated with soda, forming the natron and salt lakes mentioned by travellers. In the eastern parts of the desert the rocks are chiefly of the secondary formation, as limestone, sand-stone, gypsum, and rock salt, occasionally traversed by trap rocks; along the western seacoast they are said to be principally composed of igneous rocks, and chiefly basalt. The greater portion, indeed, of this vast space is one mass of bare rocky hills, and scorching sands, without water, bird, or tree, or even the appearance of vegetation. Here and there, however, there are to be found scattered over it fertile spots called wadys, wahs, or oases, which contain wells of good water, and a considerable portion of tropical vegetation. These are most numerous about the middle of the desert, extending southward from Tripoli to Bornou, and consequently that part of it is the most frequented by travellers. To the westward the desert becomes more cheerless and forbidding, the watering places are at a greater distance from each other, and the vegetation which they contain is more scanty. The wells frequently become dry, which occasions scenes of horror and misery that exceed all description; men and camels, disappointed of water, die in hundreds and thousands. This western portion is also more sandy than the middle, and is consequently not only more subject to the fearful simoom, but also to furious tempests of wind which roll the sands before them like the waves of the sea. To such a degree, indeed, are the sands heated by the unclouded glare of the sun, and to so great a degree of fineness are they reduced by constantly shifting about, that the atmosphere for upwards of a month is constantly charged with the particles; and to a great distance westward in the Atlantic Ocean ships often find the sails choked with them. This portion of the desert may be pronounced to be almost destitute of inhabitants; except where the scanty vegetation, in certain spots, affords pasturage for the flocks of a few miserable Arabs, who roam from one well to another. In other places, where the supply of water and pasturage is more abundant, small parties of Moors have taken up their residence, and live in independent poverty, secure from the tyrannical governments of Barbary. But the greater portion of the desert, being entirely destitute of water, is seldom visited by any human being, unless when the trading caravans thread their weary route across it. In some places, however, the ground is covered with low stunted shrubs, which serve as landmarks for the caravans, and furnish a scanty forage to the camels. Elsewhere, the unfortunate wanderer, wherever he turns, sees nothing but a boundless expanse of sand and sky, a gloomy and barren void, where the eye finds nothing to rest upon, and the mind is filled with painful apprehensions. In the midst of this solitude the traveller sees the carcasses of birds which the violence of the wind has brought from happier regions, and, as he commences on the fearful length of his remaining journey, listens with horror to the voice of the driver of the blast, the only sound which breaks upon the awful silence of the desert.—(*Cirilo.*)

The wild animals that inhabit these dreary regions are the antelope and the ostrich, whose swiftness of foot enables them to reach the distant watering-places. On the skirts of the desert, where water is more plentiful, are found lions, panthers, elephants, and wild boars; but the only tame animal that can bear the fatigue of crossing the desert is the camel. The desert is traversed in various directions by numerous routes, varying in length from 30 to 80 days, which terminate at the principal cities and towns of Soudan and Barbary, but deviate from the straight course in several instances, according as trading towns or wadys lye nearly in the way.

The Sahara is inhabited by numerous tribes of various lineage, which are scattered in its wadys and fertile spots. *Moors* occupy the coast of the Atlantic between Morocco and Senegal, and extend eastward to the limits of the Touaricks. They are subdivided into a great number of tribes, most of whom are distinguished for ferocity and love of plunder. They consist partly of pure Arabs, whose ancestors migrated from Arabia in the first centuries of the Heirah, and partly of a mixed race, descended of both Arabs and Berbers. The pure Arabs may be classed in two principal groups; the one of Himyaritish origin, and bearing the name of *Hel'el*, *Hel'i*, or *Hel'il*; the other of Kahtanian origin, and bearing the name of *Maghegh*, *Mak'il*, or *Magelli*. Of the Helal the best known tribes are the *Beni-mori* and *Mahamid*, who live near Cape Bojador, and the *El Hharits*, in the neighbourhood of Darah. To the latter may be annexed the tribes of *Tekna*, *Mesfat*, *Moghafera*, and *Ignaoua* with some others. Among the Maghylah the most distinguished tribes are those of the *Sahara* or *Welad-Bu-Sebi*, and *Delemy* or *Welad Delem*, who all dwell near Cape Blanco, and are notorious for their cruelty. Of the same lineage are the tribe of *El Wedeyah* who possess the oases of *Bu-Tilis* and *Beldah*; the tribe of *Barisseli* or *Berakeh*, who possess *Tabelbelt*; the tribes of *El-Bouyat*, *Arkenat*, and several others.

To the class of mixed Moors belong the numerous tribes who are confounded under the common name of Shawiah, but are distinguished by the particular names of *Tenezah*, *Berakuah*, *Douai*,

&c. In the Terarzah are comprised the *Walad-el-Haji-Darmako*, who border on the Senegal; the *Adjounah*, robbers who infest the adjoining coast; the *Walad Mobarek*, who dwell in the interior, and a number of other tribes. In the Beraknah groupe are the *Walad-Amar* or Moors of *Ludamar*, the *Gegebah*, the *Takant*, and many others. In the groupe of Douish are comprised the *Walad-Ghayn*, better known by the name of *Walad-Abou-Seyf*; the *Kountah*, and, perhaps, also the *Zuat*, who occupy the country towards Arawan. To the same mixed class belong the LAMTHAH, comprising the tribes of *Walad-Nun*, who inhabit *Wady-Nun*, to the south of Marocco; the *Masoufah*, who formerly worked the salt mines of *Tahasay* or *Tegazze*, which are now abandoned; and, perhaps, the *Warkalan*, who possess the desert adjoining Bilad-ul-jerid, and who appear to be now the possessors of *Tuat*, from which they derive that name.

The *Tuaricks* are a numerous and warlike people who inhabit the middle portion of the Sahara, between Tripoli, Timbuctoo, and Bornou; and have from the days of the Carthaginians and the Romans furnished the conductors of the caravans, and even the merchants who carry on the regular and active commerce which has always existed in this part of Africa. They are a fine race of people, tall, erect, and handsome, with an imposing air of self-respect and independence. Their skin is not dark, except where browned by the sun. They hold in contempt all who live in houses and cultivate the ground, and derive their own employment and subsistence from the pasturage of their flocks, trade, and plunder. They keep all the borders of Soudan in constant alarm, and carry off thence great numbers of slaves, whom they sell in Barbary. Yet, at home, they have been found frank, honest, and hospitable, paying an unusual respect to their women, and in their social life much resembling Europeans. They have even written characters, which they have cut on the dark rocks that chequer their territory. The principal tribes are: The *Hhagara*, who occupy the country between Twat and Arawan, and likewise possess Ahyr or Hayr, and have *Wallen* for their capital; they are notorious for perfidy and cruelty: the *Sourka*, who extend from Mabrouk to Jinnie, and subject all their negro neighbours to insolent exactions: and the *Taghama* and *Kolluri* to the north of Haoussa, the latter of whom possess the oases of *Asben* and *Ghat*, with the whole desert as far as Fezzan. Of all the tribes those of Hhagara and Matkara are the least black, having only a brownish or tawny tint; the others have complexions of darker shade in proportion to their vicinity to the negro races, with whose blood they have mixed.

The *Tibboos* or *Tibbos*, who are found in the eastern part of the desert, are nearly as black as negroes, but have a different physiognomy; their hair is longer, and less curled; their stature low; their features small; and their eye quick. They live on the milk of their camels, and the scanty produce of a few fertile spots; to which they add the profits of a little trade, and not unfrequently the plunder of caravans. They are themselves, however, exposed to a mightier race of spoilers, the Tuaricks, who, once a year at least, make a foray into their territory, and carry off every thing, without resistance from the cowardly Tibboos, whose only safety is to ascend certain perpendicular rocks with flat tops, beside which they take care to build their towns. They are nevertheless gay and thoughtless, delighting, like other Africans, in the song and the dance. The principal tribes are: The *Tibboos of Bilma*, between Fezzan and Aghaden, whose capital is *Bilma*, a mean town, built of earth, but having in its vicinity two salt lakes, from which immense quantities of salt are gathered, and taken to Soudan. To the south of Bilma is a desert of 13 days' journey in extent, perhaps the most dreary tract on the globe; it contains not a drop of water, nor a vestige of animal or vegetable life. *The Tibboos of Gonda* possess Aghaden, and have thousands of camels; they are notorious plunderers of the caravans; but of late have become more commercial and industrious, an improvement which they owe to their intercourse with the merchants of Tripoli. They seem to be the most numerous of all the tribes. *The Tibboos of Traila*, to the south of the Gonda; those of *Borgou* or *Birgou*, whose chief place seems to be *Yen*. The *Tibboos of Reshadeh* or of the Rocks, so named from several of their tribes living in caverns in the mountains of Tibesti. *Abo* appears to be their chief town. The *Tibboos of Arna*, so called from their chief town of the same name. But the Tibboos have not the exclusive possession of the Eastern Sahara: to the north Barca is possessed by Arabs, the best known of whom are the *Hharabyn* and *Oulad Ali*; and the series of oases which it contains along the borders of Egypt are inhabited by Berber races. To the south wander the Arab tribes of *Beni-el-hasan Doghanah*, *El Asula*, and *Salamat*; to the east the mixed Arab-Berber tribes of *Lawatah* and *Berdawah*. The middle region only belongs to the Tibboos.

The Sahara, as already mentioned, contains a number of fertile spots or *wahs* (anc. *oasis*). Of these we have already described those that border on Egypt, and acknowledge the supremacy of the Pasha—(see EGYPT). Of the others, the principal and most important are those of *Fezzan*, *Ghadamis*, *Asben*, and *Tuat*.

Fezzan lies immediately to the south of Tripoli, and is a very large oasis, being about 300 miles in length, by 200 in breadth, but scarcely distinguished from the desert, as it does not contain a running stream of the least importance. Water, however, is abundant under ground, and by raising it in wells the inhabitants have formed a number of fertile spots in which dates and grain can be reared, and where a few asses and goats, with numerous camels, are fed. The people are chiefly dependant on the trade that passes through Fezzan, which being situate midway between Egypt and Marocco, and between Tripoli and Bornou, is the point where numerous caravans cross and meet. There are also merchants in the place itself, who carry on very extensive concerns; and, from these resources, Fezzan is able to maintain a population of about 70,000. It is governed by a sultan, who is tributary to the Pasha of Tripoli; his capital is *Mourzouk*, a considerable town in a low and unhealthy, but well watered situation, which is the chief seat of the trade. *Germa*, the ancient Roman capital, is now much decayed, but still contains some monuments of its former consequence. *Zuila*, *Temissa*, and *Gatrone* are small towns on the western frontier. *Traghan*, in the south, bordering on the desert, is an industrious place, with a thriving manufactory of carpets. *Sockna*, in the desert to the north, on the road to Tripoli, forms a great caravan station.

Ghadamis or *Gadamis*, an oasis to the north-west of Fezzan, derives some importance from the passage of the caravans from Tripoli and Tunis to Timbuctoo, though these are not so considerable as those which pass through Fezzan. The chief town, which is of the same name, 240 miles S.W. of Tripoli, is divided between two hostile tribes, each enclosed by a separate wall. Ghadamis and the surrounding villages exhibit many traces of having been occupied by the Romans.

The principal oases belonging to the Tuaricks are: *Ghat*, whose inhabitants form a sort of oligarchical republic; in its chief town, of the same name, is held a great annual fair, which is much frequented by the tribes of the desert; *Ahir*, a large and fertile oasis, but little known; *Mahrouk*, small and unimportant; *Asben* is one of the largest, and its capital, *Aghades*, is said to be as large as Tripoli: it is at least one of the principal commercial marts of the Sahara.

In the western desert are the oases of *Tuat*; *Hoden* or *Wadan*; *Tisheet*; *Taudeny*; *Taghaza*; *Arawan* or *Aroan*; and the two *Walata* or *Gualata* and *Walet*. *Tuat*, 850 miles W.S.W. of Tripoli, is very extensive; it is inhabited by mixed Arab-Berber tribes; its chief town is *Aghabby*. It also contains the town of *Ain-el-Salah*, visited by Major Laing, which derives its name from certain holy wells (*Ain*). *Hoden*, *Tisheet*, and *Taudeny*, are celebrated for their mines of rock salt. *Arawan* contains a town with 3000 inhabitants. *Gualata* and *Walet* are often confounded, though quite distinct; the one being situate on the route between Senegal and Marocco, and belonging to the Wodayn; the other on the road to Timbuctoo, and possessed by the Berabysh. The only place of note on the

the north-east, north-west, west, and north, forming the watersheds of numer
elevation and physical character nothing is known. At the north-east angle o
Mountain of Cameroons rises to the great elevation of 13,000 feet, close to the s
the commencement of a range of volcanic hills, which extend to the north-eas
tains of Mandara, visited by Denham, and are probably a portion of the grea
are said to extend across the middle of Africa, and supposed to be continuo
of Kong; but nothing is known of them except the name.

RIVERS AND LAKES.—The great river of Soudan is the *Kawara*, *Quorra*, or *Ni*
part of its course *Joliba*. So far as yet known, its principal source seems to
Mount Loma, 250 miles E. by N. of Cape Sierra Leone. It flows first in a nort
about 600 miles, then almost due north for 180 miles, forming in its progress
Dibbie; it then turns again to the north-east, but, from Timbuctoo to Ya
miles, its course has not yet been explored. From Yaouri, 570 miles from the s
navigable stream, south, south-east, and lastly south-west into the Bights o
22 mouths, of which the principal are the *Formosa* or *River of Benin*, the *Ware*
and the *Old Calabar*.

Within a very short distance of its source it is already navigable, and at
scribes it, "as broad as the Thames at Westminster," that is, about a quarter
pal known affluents are, the *Cubbie* or *Cobbie* or *Quarrama*, which passes Sacca
Kadunia, a large river from Nyffe; the *Tshadda*, which passes Funda, and
a very large river, reputed by the natives to be identical with the *Shary*, one
Tchad; but which more probably has its sources only on the opposite side o
The course and termination of this great river long formed one of the mo
phical problems. Herodotus relates in his history (Euterpé, 32) a few particu
the interior of Libya by five young Nasamones, who arrived at the banks of a la
west to east, and containing crocodiles. Beyond this scanty information t
Roman geographers seem to have known nothing; and even the tables of Ptole
"very large rivers" in the interior by the names of *Gir* and *Nigeir*, still r
puzzle to his successors. The detailed descriptions of these regions given by the
historians of the middle ages are still more perplexing. On their authorit
vague reports of the natives, the Niger or Nile of the negroes was considered
during the 16th and 17th centuries, as having its course from east to west, ar
stream of the Gambia and the Senegal. Others made these two rivers and t
common source, the Lake Maberia, in opposite directions; the Niger being n
across Africa, to join the Egyptian Nile. In fact nothing certain was known
dispel the mystery in which it was involved was the principal object of Park's
first journey he reached it at Sego, and found it "flowing slowly to the eastwa
was to discover its termination. Park perished in the attempt; and geographe
themselves to no purpose, till its issue in the sea was proved by the Landers in 1
and Boussa the river is divided into numerous channels by rocks, sand-banks, ar
with tall rank grass, some of which the Landers found to be so shallow, that their
grounding; but they were told, at Yaouri, that above that place, and below B
was not interrupted by rocks or sand-banks; and that, after the wet season, ca
to and from Yaouri, Nouffé, Boussa, and Fundah. At Boussa black rocks r
middle of the stream, its waters are tossed in whirlpools, and in the dry season
not more than a stonecast across. Sailing downward from Boussa the river
pletely navigable to a finely wooded island called Patashie, below which for 20
so full of rocks and sand-banks as to render the passage very difficult. After this
its farther course to the ocean, the Kawara is a broad noble stream, varying in
to six, but being commonly between two and three, thus forming for several hun
more resembling a lake or an inland sea, than a river. Its numerous branches fo
extends 300 miles along the coast, and contains 25,000 square miles, of a dre
surround with thick fine fruit groves, and [illegible] with orange and li

with Africa. The best entrance yet known to the main body of the river, is by the branch commonly called the Nun, but even that branch is not navigable during at least six months of the year; while, during the remaining six months, steam-vessels only, and those of a very light draught of water, can accomplish the navigation. At Lever near Boussa, the bed of the river becomes so contracted and obstructed with rocks that the progress upward is stopped.

The *Senegal* or *Zanaga* rises near Timbo or Tecmbo, 216 miles N.E. of Sierra Leone, where it bears the name of *Ba-fing* (black river). It flows first northerly, and then westerly, into the Atlantic Ocean, 100 miles N. of Cape Verde. It receives a great number of affluents in the upper part of its course, but very few in the lower part. The principal of these are: the united stream of the *Kokoro* and *Ba-Wolima*, from Manding: the *Faleme*, from Bambouk and Sadadoo; the *Nerico*, which flows from a small lake named *Tiali*, and which, in the wet season, communicates with the sources of another river Nerico, an affluent of the Gambia; and the *Sakham*, from *lake Kayor*, near the west coast. In the lower part of its course the Senegal forms a number of large islands, but ultimately reaches the sea in a single stream. It is navigable for several hundred miles, and the length of its course is about 950 miles.

The *Gambia*, under the name of *Diman*, has its source in the plateau of Fouta-Toro, and has a north-westerly course of 700 miles into the Atlantic Ocean, which it reaches 100 miles S.S.E. of Cape Verde. The navigation is uninterrupted from the sea to the falls or rapids of Baraconda, a distance of about 400 miles, above which sand-banks and flats render it difficult; while the crowds of crocodiles and river horses in the water, and of other wild beasts on the banks, render it alarming, and even dangerous. Along the coast to the south of the Gambia, are several large rivers, the courses of which are not yet well known, and some of which are said to communicate with each other and with the Gambia by their branches: these are the *Casamansa*, the *Cacheo*, the *Jeba*, and the *Grande*.

Proceeding along the coast are a great many other rivers, which it is sufficient merely to name in their order from west to east:—*Campoomee, Nunez, Ponga, Dembia, Debroka* or *Sangaria, Mahniah, Morebiah, Tannah, Mellacoree, Great Scarcies, Little Scarcies, Rokelle* or river of Sierra Leone, *Kates, Karamanka, Cockboro, Yallucka, Bagroo, Jong, Boom-Kittam, Gallinas, Solyman, Manna, Pissou, Cape Mount, Half-Cape Mount, Po, St. Paul, Junk, St. John's, Grand Cestos, Rock Sesters, Sanguin, Sinou, Droo, Half-Cavally, St. Andrew, Tabetah, Frisco, Lahou, Sueira da Costa, Assinee, Seenee, Chama* or *Praa, Volta* or *Adiri, Lagos*; the last communicates with the Kawara.

The TCHAD, TJAD, SCHAD, or CHAD, is the largest lake yet discovered in Africa. Its centre lies in 15° E. long., and 13° 30′ N. lat., its length being about 200 miles, and its breadth 150; but during the rainy season its size is greatly augmented, and a broad belt of lowland is overflowed by its waters. It contains a number of islands inhabited by the Bidoomahs, a race of pirates who infest its coasts. Its principal feeder is the *Shary*, which enters the lake from the south-east, and was traced 40 miles upward by Major Denham, who found it to be half a mile broad at its mouth, and to flow at the rate of two or three miles an hour. The *Yeou* enters the lake on its west side, but is a comparatively small river, being only fifty yards broad in the dry season near its mouth, where it was crossed by the British travellers. In direct opposition, however, to their testimony, that the Yeou flows eastward into the lake, Lieutenant Allan and M. D'Avezac suppose that it is really the outlet of the Tchad, and flows southward to join the Tchadda. The Tchad was not known in Europe till the journey of Oudney, Denham, and Clapperton; though it figures in maps of the 16th and 17th centuries as the lake of Bornou. It is probably the *Lybian Lake* of Ptolemy; and on its eastern side there is a valley called *Bahr-el-Gazelle*, resembling the deserted bed of a river, through which it is supposed to have once communicated, and probably still communicates occasionally in great floods, with *Bahr Filtre*, another large lake to the eastward, of which nothing is known but the name.

The coast of Senegambia is remarkably low, and the same flatness extends from the Senegal to Guinea. Immense forests, the unchecked growth of centuries, with underground clothed with the rankest vegetation, exclude the rays of the sun; leaves and herbage fall and rot, perpetually increasing the depth of a sour damp soil. The current of the rivers is sluggish, owing to the slight inclination of their channels, which are generally broad and shallow, and often contain bars someway up the stream; mud is deposited profusely on their sloping banks, and favours the endless multiplication of mangroves. Inland the surface of the country continues monotonously flat, for a considerable distance, to the foot of the first hills, which swell at last into the great range of the mountains of Kong. The general appearance of the coast of Guinea from the sea may be compared, says Mr. Meredith, to an immense forest; highlands are seen in different directions, crowned with lofty trees and thick underwood. On a nearer prospect, and on a strict examination, the valleys will be found in many places richly planted, and extensive plains beautifully studded and decorated with clumps of trees and bushes are also to be seen. As we advance into the country, where there is more moisture throughout the year than on the coast, and where the fertility of the soil produces the most vigorous vegetation, the woods are so stopped up by its luxuriance as to be almost impenetrable; and the surface is hid under a covering of shrubs, weeds, and herbs. The rivers are seen winding in different directions, flowing rapidly in some places, and in others forming stagnant pools.—(*Account of the Gold Coast of Africa, by Henry Meredith, Esq., Governor of Fort Winnebah.* London 1812.) The soil in the vicinity of Sierra Leone consists chiefly of a slight stratum of brown gravel, on a semivitrified rock of the same colour. On the coast of Guinea, from Cape Palmas to the river Volta, the soil, within five or six miles of the shore, is of a silicious nature; the clumps of hills, which are to be met with in every direction, are composed principally of gneiss and granite. Farther inland the sandy soil becomes more and more mixed with decayed animal or vegetable matter, and in the valleys a rich alluvial soil is met with.—(*Martin's Western Africa*, 259.) Water, also, which on the coast is scarce and brackish, becomes in the interior good and plentiful. Farther east the maritime flat country becomes broader than on the gold coast, and extremely fertile, terminating at last with the swampy delta of the Kawara, which is profusely covered with rank vegetation.—(See VEGETATION, in the general description of Africa.)

Of the physical features of the interior of Soudan we are unable to give any general satisfactory account. The western part of the country consists of the basin of the Kawara, bordered on the south and west by mountains, on the north by the desert, and having its eastern boundary formed by a range of hills and high ground which divide it from the basin of the Tchad. The last boundary, supported on two sides by mountains, is probably a table-land of considerable elevation, the lowest part of which is occupied by the great lake; but in that respect, nothing is positively known. Its elevation, however, is certainly not so considerable as to raise it into the cooler regions of the atmosphere; while its situation in respect of the desert and the sea, open to the one, and secluded from the other, necessarily renders the climate hotter than that of the maritime regions farther south and nearer the equator.

The climate of Soudan is tropical; and the maritime region of Senegambia experiences the most intense heat. There are only two seasons, the one of which may be considered as a moderate summer, the other as a continuance of burning dog-days. During the whole year the sun at mid-day is insupportable. The north and north-west winds blow almost without interruption. The east or trade winds are only felt within 100 or 120 miles of the coast; the south wind is very rarely felt. During the great heats a dead calm prevails for about 30 days, which enervates the most robust constitutions. From the beginning of June till the middle of October, sixteen or eighteen heavy rains fall; during

the rest of the year there are heavy dews. At Sierra Leone, farther south, the range of the therm
meter is very small. The average heat is 82°: the rains continue for six months and floods are
but the climate is on the whole as healthy to Europeans as any other tropical climate. From the great
of the east [illegible] at the equator it might be supposed that its climate is hotter than that
parts of Asia, which are nearer the tropics, but this is not the case. It will be found, on the contrary,
that all the [illegible] and about 5° north of it, are the most temperate parts of the
tropics. Africa has less power there than in more northerly or southerly countries because
it [illegible] the tropics. At Bissao, when the sun is at its greatest distance from
the tropics, the heat at sunrise has been found to be 83°, and at Sierra Leone 86°. It
should seem, therefore, that [illegible] at Sierra Leone about 4°. At Cape Coast Castle, 5° N. lat.,
the [illegible] and as high as 93°; but the usual height observed in the hottest months
was from 86° to 88°, and that place is considered the hottest on the Gold coast. To the eastward
of Cape Coast Castle, the heat is never known to exceed 87°; and has been observed as low as
78° at Whydah, in the Bight of Benin, and 82° at Badagry, and may be divided into the wet and the dry; of the latter
however, there are two in the year, one commencing at the end of May or early in June, the other
[illegible] of October or early in November; but the last scarcely deserves the name of wet season,
consisting only of a few days rain, and is succeeded by a very fine season. The rains set in with a violence unknown in
temperate climates, and continue with out intermission for two or three days. The quantity which falls
during each season is immensely great. Low lands are overflowed, and rapid streams are formed
with astonishing force. After this flood the atmosphere clears, and strong breezes commonly blow
the heavy rains are not again expected, though showers fall at the changes of the moon, which
do not so much water as would fall in England from a whole day's rain. About the end of July the
rains are considered to be at an end; and shortly after, the foggy season commences; a season that
may be so called, which is very unhealthy, but the only unhealthy season that is known on the coast.
The commencement of the foggy season is a sure indication that the rains are over: it commences and
terminates about the 15th of August, after continuing two or three weeks. While it lasts the atmo-
sphere is thick and heavy, the sounds are very low, the sea breezes do not blow with their usual power,
and the land winds are scarcely perceptible. The effects of this season are much felt by asthmatic
people and those whose lungs are unsound. The second rainy season is not nearly so violent as the
first; the rains do not fall in the same constant stream, and are not succeeded by fogs. The dry season
commences in November, and continues for the remainder of the year, that is, till May. The
winds are regular and mild. The land winds, which blow from the N. and N.N.W., and the sea
breezes, which blow from the S.W. and W.S.W., prevail, with little interruption, throughout the season.
The sea breeze commences about 9 or 10 o'clock in the forenoon, and declines at six in the evening;
it ceases about 8 or 10, and is succeeded by the land wind, which blows till 6 or 8 in the morning.
The sea breeze is stronger than the land wind, and, at the full and change of the moon, generally
blows with considerable force. As the sun rises in the heaven this wind gains strength, and declines
gradually as he approaches the western horizon; it is very refreshing, and is considered salubrious.
In the dry season the coast, from Cape Verd to Cape Lopez, or from 15° N. to 1° S. lat., is visited
by two remarkable winds, called tornadoes and harmattans. The harmattan or harmanta is an
easterly wind which prevails in December, January, and February; it commences at any hour of the
day, at any time of the tide, or any period of the moon; and continues sometimes only a day or two,
sometimes for five or six days, and has been known to last 15 or 16. There are generally three or
four returns of it every season; it blows with moderate force, not so strongly as the sea breeze, but
somewhat more so than the land wind. A fog or haze always accompanies it; and the gloom which
it occasions is so great as sometimes to render even near objects obscure. The sun appears only for
a few hours about noon, and is then of a mild red colour, exciting no painful sensation to the eye.
Extreme dryness is another remarkable property of the harmattan; no dew falls while it lasts, and
there the least appearance of moisture in the atmosphere; vegetation is much injured; tender plants
and most of those in the gardens are destroyed; the grass withers and becomes like hay; even the
vigorous evergreens feel its pernicious influence. The eyes, nostrils, lips, and palate of animals
animals become dry and disagreeable; the lips and nose become sore and even chapped, and, although
the atmosphere is cool, there is a troublesome sensation of prickly heat on the skin. If the harmattan
continue for four or five days the smart skin peels off, first from the hands and face, and afterwards
from the other parts of the body, if it continue a day or two longer. To a European it produces a
sensation of a very slight frost. Salubrity forms a third peculiarity of the harmattan: it is highly
conducive to animal health; people labouring under fluxes and intermitting fevers generally recover
during its continuance; and those who have been weakened by the disease or the remedies, recover
their vigour. It stops the progress of epidemics; and infection cannot be communicated even by art.
Its effect on furniture is very remarkable; it exposes the deceptions of the cabinet-maker in the
most singular manner; it contracts flooring so much that light passes through. The process of evapo-
ration, indeed, proceeds with astonishing rapidity. Tornadoes most commonly commence in May,
and cease when the rain sets in. They sometimes blow before or after the second rains, and sometimes
precede a harmattan; they are felt, however, with greater violence before the first rains. They blow
invariably from the eastward, that is from south-east to north-east; when they incline to the south-
ward of south-east they have more the appearance of steady gales of wind than of tornadoes. Tornadoes may be expected a day or two after the full and change of the moon, and give sufficient notice of
their approach, so that ships have time to prepare for them. When vivid and successive flashes of
lightning are seen in the east, attended by thunder and heavy clouds, while the horizon appears clear
and of a blueish cast, an approaching tornado is indicated. As the storm advances, the horizon be-
comes darkened, and soon the eastern sky is entirely overcast; the lightning flashes vividly and in
quick succession, attended by slow and apparently distant thunder. By and by a gentle breeze is felt,
which increases almost instantaneously to violent gusts of wind, which are usually accompanied with
rain, and which, in general, do not continue longer than half an hour or fifty minutes. When the
violence of the blast is over, the rain falls with great rapidity and in considerable quantity. The
lightning and thunder again commence, followed by wind and rain; but words cannot adequately
describe the awful sublimity of the scene. When the violence of the storm is over, rain continues to
fall for several hours; after which the sky clears up, but the sun continues obscured for the rest of
the day. During their continuance the thermometer falls 30 or more in a very short time. The
heavy rains which accompany and succeed a tornado, refresh the earth, quicken vegetation, and cool
the atmosphere to such a degree that the natives endure the mid-day heat of those months without
inconvenience; and, in July and August, when the people in the southern parts of Europe are exposed
to an oppressive heat, the natives and residents in Guinea enjoy a moderate and agreeable temperature, while vegetation proceeds with such rapidity, that the country, especially inland, exhibits a degree of fertility inconceivable to those who are strangers to tropical regions. *Meredith*, chap. I.

Of the mineralogy of Soudan very little is known; it produces abundantly in some places the precious article of gold. The kingdom of Bambouk is almost entirely a country of mountains, from which flow numerous streams, almost all of which roll over golden sands; but the principal depositories where the metal is traced as it were to its source, are the two mountains of Natakon and Semayia. The former of these consists of an almost entire mass of gold, united with earth, iron, and emery

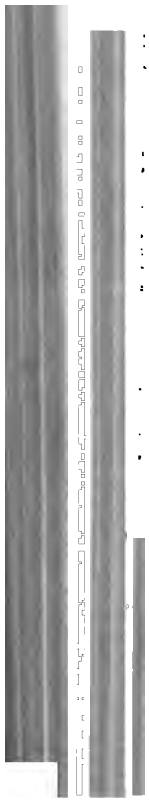
In Semayla the gold is embedded in hard sandstone, and partly in red marble. Gold, indeed, seems to abound throughout all the range of the mountains of Kong; and a portion of Guinea has been named the Gold Coast, from the abundance of that metal which is or used to be brought from the interior. We know also that iron is forged in several places; and no doubt other metals will be found in abundance, when the pioneers of civilization shall have succeeded in reaching their localities.

The forests contain cocoa trees, palms, mangoes, bananas, tamarinds, papaws, citrons, oranges, pomegranates, and sycamores; the locust tree, which yields an agreeable beverage; the shea or butter tree; the tallow tree; the teak tree, now become a valuable article of export; and many others, among which the immense baobab or adansonia stands pre-eminent. Its fruit, called monkey's bread, affords abundant food to the negroes; the whole of Senegambia and Guinea is adorned with its green arcades; and the name of Cape Verde (the Green headland) is said to have been suggested by the hue of its foliage. Of aromatic plants are pimento, Spanish pepper, malagruette (cardamomum majus), and ginger. Cotton succeeds, and even excels that of Brazil; the indigo is excellent; and the valuable gums which the country supplies furnish important articles of commerce. These are gum-guaiac, red astringent gum, gum-copal, the inspissated juice of euphorbium, and gum-dragon; several dye-woods are also found. Alimentary plants are met with in great abundance, as maize, millet, rice, yams, casada, potatoes, pulse, plantains, bananas, guavas, chillees of all kinds, and other tropical fruits. A mucilaginous vegetable (*helluscus esculentus*) is plentiful in the country, and is much used by the natives in their soups. Another mucilaginous fruit called enteraba is also highly nutritious. European cabbage and eschallots are cultivated in some places; the sugar-cane grows spontaneously, and the black pepper has been discovered in the interior of the Gold Coast. The palm tree is very profitable to the natives; the trunk produces an agreeable, but intoxicating liquor, called palm wine; and the fruit yields an oil of great delicacy, which the natives use in all their dishes, and which has now become a very important article of their trade with Europeans. Of its leaf they make ropes and thread, which they convert into fishing lines and nets; a finer thread is made from the filaments of the leaf of the wild aloe and the pine apple. Tobacco grows every where abundantly, and the negroes are extravagantly fond of smoking it. The exuberant abundance of the aloes, balsams, tuberoses, lilies, and amaranths gives the flora of these countries a degree of magnificence which is quite surprising to Europeans. But perhaps the most singular feature of the vegetation is the height to which the Guinea grass grows. This plant forms immense thickets, from ten to thirty feet high, where herds of elephants and boars wander unseen. In the dry season it withers, and then, in order to clear the ground, the natives set it on fire. When kindled, the fire spreads with great rapidity, forming by night long lines of light, and by day filling the air with columns of smoke; and it is this practice which appears to furnish the most natural explanation of the "torrents of fire" seen by Hanno the Carthaginian in his voyage of discovery.

No part of the world produces greater numbers of elephants, monkeys, antelopes, deer, rats, and squirrels. In Soudan the elephant lives in a state of nature, and is no where tamed; the river-horse grows to a monstrous size; but the rhinoceros seems to be unknown. The lion is less common than the panther and the leopard; the spotted or striped hyena is frequently seen; jackals are formidable and destructive; the tall giraffe is found in the deserts; the zebra lives in droves, and is hunted for the sake of both its skin and its flesh. Varieties of monkeys abound in all the forests, the most remarkable being the kimpanzay (or chimpanzé, *Simia troglodytes*). It approximates less to the human form than the orang-outang of the Eastern Archipelago, but perhaps surpasses him in intelligence. Two remarkable animals, the *lemur galago*, and the *lemur minutus*, akin to the monkey tribe, have hitherto been found only in Senegambia. The poto or sloth is common in Guinea. The negroes catch the zibeth in a very young state, and tame it. The boar peoples the marshy forests; but the pig is small and weak. The dogs are of the size of setters, but approach in form somewhat to the mastiff; they do not bark, and their hair is short, coarse, and red, as in all warm countries. The horses of the Gold Coast are small and ugly, but Adanson admired the horse of Senegal; this river is probably the southern limit of the Berber or Moorish breed. The ass is exceedingly handsome and very strong. The negroes rear beeves, buffaloes, sheep, and goats. The birds exist in great numbers and in boundless variety; some of the smaller species are remarkable for the beauty of their plumage. The monoceros or trumpet bird is found in all the negro court-yards, along with the armed swan, the Egyptian swan, the pintado, and the greater part of the poultry known in Europe. Of the wild birds we may specify the aigrette, whose feathers form an article of trade; and beautiful parroquets in unlimited numbers, numerous families of sparrows and humming-birds sport round the huts of the negroes, and the baobab supports the nest of the solitary pelican.

The whole region is much infested with noxious and venomous insects and reptiles. Cameleons are very common on the Gold Coast; also crocodiles or alligators, lizards, land-crabs, guanas, scorpions, centipedes, and a variety of snakes, some of which are of enormous size. In the forests the termites or white ants display their astonishing industry, and their destructive power; but there are also numerous swarms of wild bees, whose honey and wax are objects of trade among the negroes. Crocodiles, cachalots, and manatis inhabit the mouths of the great rivers. Oysters are said to fasten in great multitudes on the immersed branches of the mangroves, with which these rivers are bordered; they are large, fat, and very agreeable food, though less cool and refreshing than those found in more northern latitudes. The lakes and rivers abound with mullet and other delicate fish; and the sea swarms with fish of various kinds, which are caught in great abundance during the dry season; turtle also are often found.

All the inhabitants of Soudan are of the Negro or Ethiopic family (see *antè*, p. 107), but among them are numerous varieties, some being more or less dark coloured, or making a near or more distant approach to the European character than others. Of these we must particularly distinguish the *Foulahs*, who are widely diffused over Africa. The great majority of the nation are found about the sources of the Gambia and the Rio-Grande; but colonies of them are also found on the banks of the Faleme and the Senegal: there are likewise tribes of them to the south of Fezzan, and on the confines of Bornou, and even in the interior of that kingdom, where they are called Fellatahs. They also inhabit the kingdoms of Massina and Timbuctoo on the Kawara, and have established a wide extended empire in Haoussa. They have a reddish black or a yellowish brown complexion, longer and less woolly hair than that of the negroes, less flat noses, and lips not quite so thick; with features which seem to indicate a mixture of Berber and Negro blood. They are a people of mild dispositions, with flexible dispositions and a natural aptitude for agriculture. They formerly did not live in towns, but were scattered over the country, attending to their herds and flocks, living in temporary huts, generally in the midst of unfrequented woods, and seldom visiting the towns. But from this condition they were roused by a countryman, Sheikh Othman Danfodio, a native of Ader, who built for himself a town to which the Fellatahs flocked. He led them to war and conquest, till at length doubly animated by the lust of plunder and the ardour of fanaticism, they have become a large and powerful nation; they are all Mahometans. With respect to the genuine negro races; the names of their families, tribes, and localities are sufficiently indicated in M. Balbi's table, contained in our general description of Africa. They are all in a low stage of civilization, living in the simplest manner, and practising only the simplest arts; but, at the same time, there is no part of the world where the influence of variety of government on the character of the people is more distinctly perceived than in Soudan. In general they have a great desire for gain, and will undergo many vicissitudes and



...coast for 100 Spanish and are intermingled in carrying on the extensive ... and va...

The Jolof States are governed by princes whose titles vary in each. The ... hereditary in the same family, but in the eastern and the great vass... of the others. The principal states are as follows:—*Walo*, the ... lies to the south of the Senegal, and was chiefly under the influence of ... *Kayor*, which extended inland from the coast from Senegal to ... Verde, and to the north of the Lake of Kayor. Its principal towns a... and *Kaap*, on the east or frontier, a place with 500 inhabitants. *Baol*, wh... *Tegal*, also on the coast, to the *Lamanjos*, or mine Kilby S. of Cape Verde. *Syn*... and whose capital is *Joar*. *Jolof* itself, properly so called, formerly the ... state, but now much reduced and of which all the other Jolof states are only ... is governed by a prince who resides at *Biarnagis*, *Birkor*, or *Birasso*, ... country contains vast forests of palm trees, particularly of gum-arabic. It pro... of every kind and beauty. *Salum*, which is partly Jolof and partly Mandingo ... longs to the former, as is indicated by its king's title, which is *Boar*, is situate... of the Gambia.

The Foolah or Fellan states were formerly governed by Sakhanes or Sirati... the sovereign power is now in the hands of a religious chief, who has the Mos... title of Emir el-Moumenin, commander of the faithful, vulgarly corrupted ... crowned in each state by a council of Marabouts or priests: under whose control ... thing important without their assistance. Of the Foolah states the following ... *Fouta-Toro*, which extends along the left bank of the Senegal, and is divided ... three, which are subdivided into districts. These provinces are, Fouta proper ... to the west, and Damga to the east. *Bondou*, to the south-east of Fouta-Toro ... provinces and districts: the capital and residence of the Almamy, is *Jelane*, a s... by clay walls, and containing only 150 inhabitants. *Fouta-Jalo* occupies the ... region which contains the sources of the Senegal, the Gambia, the Falème, and ... comprises the three provinces of *Timbo* or *Temboo*, *Labe*, and *Timbi*, with ... which extend both to the west and to the east. *Timbo* or *Temboo*, 230 miles N... is the capital of the state and residence of the Almamy, and has a populati... *Gaoul*, which formerly extended to the north of the Senegal, is now limited to t... *Logo*, to the south of that river, near the falls of Felou and Gouina. *Fouladou* o... comprises the provinces of Brouko and Gangaran, is little known. The princi... *Bangassi*, the best fortified of all the towns of Western Soudan.

The Mandingoe States appear to form bodies politic less homogeneous than ... and the Foulahs. The principal are:—*Kaarta*, to the north-east of the Senega... of the river and the territory of Ludamar: its capital was formerly *Kemmoo*, ... *Bambouk*, between the Ba-fing or Upper Senegal and the Falème, is an aggreg... Niagala, Natlega, Tambaoura, Satadoo, Konkadoo, Camana, Waradoo. *Dentila*... the Upper Falème, noted for the industry of its inhabitants and its iron mines... from Dentilla by the wilderness of Samakara, which also bears the name of Te... north side of the Gambia, to the south-west of Bondou, from which it is separa... of Simbani. Its capital is Medina, with 500 inhabitants. *Yani*, called also th... from its capital, on the north bank of the Gambia, between Woolli and Salum. F... the mouth of the river, are the small states of *Badiboo*, *Sanjadi*, *Kolar*, and *B*... dencies of the Jolof kingdom of Salum. *Kaabo* extends from the Gambia to th... small states of *Kantor*, *Tomani*, *Jemarroo*, *Eropina*, *Yamina*, and *Jagra* appear t... also exercises sovereignty over the *Biafras*, *Bakanes*, and *Papels*, whom the Ma... down to the coast. *Fouini* comprises the provinces of *Combo*, *Jereja*, and *Kaa*... minion over the Feloupes and Banyons of the coast.

The indigenous states of Senegambia are:—*Galam* or *Kamga*, which belong... is a narrow strip, along the left bank of the Senegal, and is divided by the Falème... each governed by a prince, who bears the title of Tunka. *Jallunkadoo*, which com...

native states in Guinea are those of *Ashantee*, *Dahomey*, *Ardra*, *Badagry*, *Lagos*, &c. *Ashantee* has become, within the last century, a powerful empire, extending along the coast from the river St. Andrew, 6° W., to the Popo, a dependency of Dahomey, about 1° E. long., or altogether about 480 miles, comprising a number of petty states, tribes, and nations formerly independent. The Ashantees themselves amount to about 1,000,000 of people, inhabiting Ashantee Proper, a region of 14,000 square miles inland from the Gold Coast. They are a very superior class of negroes, manufacture excellent cotton cloth, smelt metals, and build large houses. The country is governed by a king, aided by four chiefs as counsellors. His majesty's legal allowance of wives is 4000; and polygamy is carried to a dreadful extent among his subjects. They are a brave, but savage people; they sacrifice whole hecatombs of human victims to propitiate the spirits of their ancestors; and, on the death of any member of the royal family, thousands are slain, to attend him in the other world. The capital of the empire is *Kommasi* or *Commassie*, 120 miles N.N.W. of Cape Coast Castle, a large town with regular streets, all of which are named, and each under the charge of an officer of police; but the houses are low, cemented with clay, and thatched. In the centre is the king's palace, inclosed with a wall, and containing small chambers decorated with a great profusion of gold and silver ornaments, and sculptures of birds and other animals pretty well executed. Commassie is the centre of a great trade, carried on not only with all parts of the empire, but also with Timbuctoo and Kashena in Central Soudan. Its permanent population is estimated at 15,000, but, on great festivals, 100,000 are sometimes assembled. The other principal places are: *St. Andrews*, near the middle of the Ivory Coast, the residence of a petty king, and the seat of considerable trade; *Cape Lahou*, a large trading town, which exports a great quantity of gold dust; *Grand Bassam*, a large town with a flourishing trade, particularly in the export of gold dust; *Accra* or *Ankran*, the capital of a kingdom of the same name, and containing about 12,000 inhabitants. In the interior are, *Abbradie* and *Dankara*, the capitals of two petty tributary states, which contain the richest gold mines in the empire; *Kickwicherry*, in the kingdom of Assin, and *Coranza*, in a kingdom of the same name, whose inhabitants are more civilized than the Ashantees; *Diabbie*, the capital of Amina; *Sallagha (Sarem)*, the capital of the kingdom of *Inta*, which extends to the left of the Rio Volta, and whose inhabitants are chiefly Mahometans, distinguished for their industry and civilization. Sallagha is one of the greatest commercial marts in the empire. *Yandi*, the capital of the great kingdom of *Dagoumba*, is a very commercial town about as large as Kommassie, and the residence of a Mahometan king, who is tributary to Ashantee. The inhabitants are very industrious, and the town contains an oracle of great repute among the negroes.

The kingdom of *Dahomey* appears to extend from the eastern frontier of the Ashantee empire to the frontiers of Yarriba. It contains a number of large and populous villages; the principal towns are: *Abomey*, the capital, about 80 miles from the coast, a well-built town, with 24,000 inhabitants; but the king usually lives at *Calmina* or *Agona*, where he has two palaces or country houses; *Whydah*, the capital of a kingdom of the same name, formerly independent; *Gregoy*, a large town with 20,000 inhabitants; *Grand-Popo* or *Ifa*, a considerable town on an island at the mouth of the Moussi, and the capital of a small tributary state. The kings of Dahomey have been long famous for their ferocity. Mr. Dalyell, who paid one of them a visit towards the end of last century, found the road to the royal cottage strewed with human skulls, and the walls adorned, or almost covered, with jaw bones. His government is the most rigorous despotism, the lives and properties of his subjects being entirely at his disposal.

The kingdom of *Ardrah*, formerly tributary to Dahomey, but now belonging to Yarriba, is situate on the coast to the south-east of Dahomey. Its capital, *Allada* or *Ardrah*, is a well-built and commercial town, with 20,000 inhabitants. The kingdom of *Badagry* is a very small state, whose capital, of the same name, is the place where several European travellers have landed on their way to the interior. The kingdom of *Lagos* or *Awane*, is a small state at the mouth of the river Lagos. Its capital, of the same name, has about 5000 inhabitants, and has become noted as the largest slave market in Guinea. It is built on a small island at the entrance of *Cradoo Lake*, which extends about 70 miles parallel to the sea, from which it is separated by a narrow bank, and communicates with the river of Benin.

Along the coasts of both Senegambia and Guinea, several of the European nations have long had settlements. Those of the French are situate on the Senegal, and along the coast between the desert and the Gambia; the Portuguese stations are between the Gambia and Sierra Leone; the British and Dutch settlements are on the Gold Coast, and the former also at Sierra Leone and Isle de Los in Senegambia.

The *French Possessions* are divided into the two arrondissements of *St. Louis* and *Goree*; the former comprising the island of *St. Louis* in the Senegal, and those of *Babague*, *Safal*, and *Ghimbar*; and the different factories along the river, as *Kamou*, *Makana* or *St. Charles*, *Bakel*, *Dagana*, and *Faf*; with the *escales* or gum markets of *Coq*, *Darmankours*, and *Trarzas*; and also that part of the sea coast, which extends from Cape Blanco to the Bay of *Iof* or *Yof*, on the north side of Cape Verde. The arrondissement of Goree comprises the island of *Goree*, and the coast from the bay of Iof to the mouth of the Gambia, where is situate the factory of *Albreda*. But it may be remarked that the French dominion does not extend over all the countries which border these coasts, most of which are independent. The capital of the French possessions is *St. Louis*, a well-built town, on an island or sandbank in the Senegal, near its mouth. It is the entrepot of the trade of that river, the principal article of which is gum. It has an agricultural society, and contains about 6000 inhabitants. *Goree*, a small town, with about 3000 inhabitants, is situate on a small island or rock, of the same name, on the south side of Cape Verde. *Bakel*, on the Senegal, in Bondou, is a small place with only 400 inhabitants, but has a garrison of 100 soldiers. *Dagana*, a negro village in the kingdom of Walo, with 1200 inhabitants. *Makana* or *St. Charles*, a factory built in 1825, on the site of Fort St. Joseph, above Bakel. *Portendik*, on the coast, in the territory of the Moorish tribe of Aulad-Ahmed-Dahman, is inhabited only at the season for selling gum to European traders. It is about 170 miles N. from the mouth of the Senegal, and there are large gum forests in the neighbourhood.

The *Portuguese Settlements* comprise only the small places or stations of *Cachao*, *Bissao*, *Zinghichor*, *Farim*, and *Geba*, all in the vicinity of the Rio Grande and Casamanza rivers, and *San Domingo* on the Rio Pongo. *Cachao*, a small town with a harbour, and 500 inhabitants, is the residence of the governor.

The *British Possessions* in Senegambia are those of *Sierra Leone*, the *Isle de Los*, and *the Gambia*. *Sierra Leone* (Lion Hill) is a peninsula, extending from the estuary of Sierra Leone to Yawry bay; presenting an irregular mass of peaked mountains, with valleys and prairies lying between them. The mountains are covered to their summits with lofty forests, which give the scenery a beautiful, rich, and romantic appearance. The river which forms its eastern boundary is a noble estuary extending 20 miles inland, varying in width from 10 miles at its entrance, to 4 where it terminates. The settlement was formed in 1787, with the view of commencing the introduction into this part of Africa of the benefits of European civilization. It has been largely colonized by maroons and negroes from America and the West Indies, and captured slaves; and in 1833, contained 29,764 inhabitants; but its prosperity has advanced very slowly, and, so far as regards the objects originally intended, the settlement may be pronounced a failure. Throughout the peninsula there are several villages; but the capital is *Freetown*, at the northern extremity, a well-built place, with regular and spacious streets. The settlement has long laboured under the imputation of extreme unhealthiness, and has been called "the white man's grave," but it has of late years very much improved in this respect, and

is, indeed, now represented as not more unhealthy than any other place within the tropics, Europeans being indebted for their great mortality more to their improper manner of living than to the character of the climate. The *Isles de Los*, in N. lat. 9° 16', W. long. 16°, five in number, about 60 miles N. of Sierra Leone, are very valuable as a station for the trade which is carried on with the rivers of the adjacent continent, consisting in the exchange of British goods, for hides, ivory, gold dust, &c. There are several establishments on the Gambia. The principal is *St. Mary's Island*, at the entrance of the river, which it commands; it is 15 miles long, but narrow and flat; its chief town is *Bathurst*, at the eastern point. *Fort-James* is situate on an island about 30 miles up the river, only 200 yards long and 50 broad, and imperfectly fortified. Opposite the fort, on the north bank, is *Jillifree*, in a healthy situation, and surrounded by a fertile district. On the south bank are *Vintain*, *Tancrowal*, and *Jonka-konda*, of which the first is 2 leagues, the second 12, from fort St. James, and the last is considerably up the river. *Macarthy's Island* is more than 300 miles up the river.

The *British Settlements on the Gold Coast* are *Dix-Cove*, *Succandee*, *Commenda*, *Cape-Coast Castle*, *Annamaboo*, *Tantum*, *Winnebah*, and *Accra*. These were formerly in the possession of the African company, and afterwards taken under the immediate charge of the British Government, but in 1828 were again placed under the management of the merchants of London engaged in the African trade. The business in London is managed by a committee of three merchants, appointed by Government, and accountable to the Secretary of State for the proper application of the funds allowed for the maintenance and defence of the settlements, which amount to £3500 a-year. With this sum eighty men are clothed, armed, and maintained, for their defence, and all other expenses provided for. The forts are governed by a president and council. *Cape-Coast-Castle* stands on a rock of gneiss and mica slate, about 20 feet above the level of the sea, in 5° 6' N. lat., and 1° 10' W. long.; it is an irregular square, with a bastion at each angle (Mr. Martin says "*four* bastions at each angle," which is certainly incorrect), the whole mounting about 80 guns. Within are spacious buildings for the accommodation of the residents. Outside there is a native town; and the adjacent country to a considerable distance has been cleared and rendered fit for cultivation. The ruling natives are the *Fantees*, a clever, stirring, turbulent race. *Annamaboo*, 10 miles E. of Cape-Coast Castle, is a good square fort close on the sea, with a native town embracing it in the form of a crescent. At *Accra*, in 0° 5' W. long., is the British station of *James' Fort*. The other settlements, says Mr. Martin, require no separate notice. The trade of these settlements, and generally of Western Africa, is of considerable importance to Great Britain, and is yearly increasing. The exports alone amount to the value of £300,000.

The Dutch settlements consist of: *Fort Antonina*, near *Axim*, and *Fort Hollandia* or *Fredericksburg* near *Pockoe*, with several others. The principal settlement is *Elmina*, or *St. George de la mine*, which is the residence of the governor-general. It is a well-built town, with a good citadel, and a fort, a great trade, and about 10,000 inhabitants.

The principal Danish settlement is *Christiansborg*, 2¼ miles from James Fort at Accra. The Danes have several other small forts and factories along the coast.

In 1821 a colony of free blacks from North America was founded on the Grain Coast of Guinea, with the view of providing a place to which that class of the inhabitants of the United States might be induced to remove, as well for their own benefit as for that of their native country, over which they might gradually spread some part of the civilization which they had themselves acquired in the new world. The managers of the colony have purchased or otherwise acquired a tract of country extending about 225 miles along the coast, with a breadth inland of 20 or 30, to which they have given the name of *Liberia*. The number of colonists amounts to about 4000. The soil is said to be fertile, and the climate better than in most other parts of the coast. Rice, cotton, coffee, sugar, indigo, bananas, cassava, and yams, are raised; and camwood, palm-oil, ivory, hides, wax, and pepper, are among the exports. The settlement is visited by traders from the interior; and some trade is carried on with Europe and America. The local interests and minor affairs are confided to the colonists themselves, who elect two legislative chambers; but the government is substantially vested in the agent of the American Colonization Society. Their chief town is *Monrovia*, on Cape Mesurado, N. lat 6° 25'; W. long. 10° 46', and contains 1200 inhabitants.

CENTRAL SOUDAN contains the following states and towns: — *Sangaran* or *Sangara*, a large country inhabited by idolaters, under several independent chiefs, and containing the sources of the Joliba. *Youre*, a small country inhabited by Jalonkes, and governed by a Moslem chief, is a hilly region with rich gold mines, the produce of which supplies the markets of both the coast and the interior with that precious commodity. Its capital is *Boure* on the Tankisso, an affluent of the Joliba on the left. *Kankan*, to the north of Sangaran, on the Milo, is a busy commercial town with 6000 inhabitants, all Mahometans, and is the capital of a state of the same name. *Wassoulo*, to the north of Kankan, is inhabited by idolatrous Foulahs, who are nevertheless very industrious as shepherds and cultivators. The small village of Sigala is the seat of the chief, who is rich in his possession of gold and slaves. *Bambarra* lately formed an extensive and powerful kingdom, but is now divided into two states, which may be called Upper and Lower Bambarra. In the former is *Sego*, on the Joliba, a large town with 30,000 inhabitants, according to Park, and the capital of the kingdom; *Bammakoo*, a commercial town farther up the river; *Maraboa*, *Yamina*, *Sami*, *Sansanding*, and *Sego*. The kingdom of Lower Bambarra was established some years ago by a Foulah chief, and is now the principal power in Western Soudan. Its capital is *Jenneh*, a large well-built town at the end of a small island in the Joliba, and is the seat of a great trade. *El-khamdo-Illah*, 80 miles N.E. by N. of Jenneh, was recently founded for the purpose of enabling the pupils at the schools to pursue their studies away from the distractions and the noise of the capital. *Isaca*, at the confluence of two branches of the Joliba, is the port of embarkation for travellers to Timbuctoo. *Yassina*, on the Joliba, is the capital of a kingdom governed by a brother of the chief of Jenneh. The kingdom of *Kong*, noted for the industry of its inhabitants, lies to the south of Bambarra, among the mountains to which it gives its name. Its capital is a place of the same name. Further down the river, on the right bank, is the state of *Bandu*, inhabited by a commercial people resembling the Mandingoes. The *country of the Dormans* extends along the right bank of the Joliba from the lake Debo to the environs of Dire, a village dependent on the king of Timbuctoo. Its chief resides at *Aboulia*. The kingdom of *Tombuctoo* (Timbuctoo), which extends along the Joliba, is now confined to much narrower limits than it once possessed, and is obliged to pay tribute to the Tuariks to prevent them from plundering the caravans which come from all quarters to the central point formed by the city of *Timbuctoo*. It is a large open town, 3 miles in circuit, situate in a sandy plain, 5 miles N. of the Joliba; the houses are mostly built of brick, but have only a ground-storey, and the streets are wide enough for three horsemen to pass abreast. It contains seven mosques. Though its trade has much declined from what it was, yet Timbuctoo may be considered as the principal mart of this part of Africa. Its port is at *Kabra*, a small town on the left bank of the Joliba. *Borgou*, chiefly to the right of the Kawara, is a confederation of several petty kings, the most powerful of whom are those of *Bawa*, *Kiama*, *Nifé*, and *Boussa* or *Bussh*. The capital is *Boussa* or *bussh*, on the left bank of the Kawara, with about 12,000 inhabitants. *Kiama*, on the flank of a chain of hills, the residence of the sultan of Yarro, appears to be the most commercial and populous town of Borgou, and contains so many as 30,000 inhabitants. *Wawa*, one of the finest towns in the country, contains 18,000 inhabitants. The kingdom of *Yaouri*, situate between Haoussa and Borgou, is the most powerful in this part of Soudan, and its sultan has suc-

cessfully repelled the aggressions of the Fellatahs. *Yaouri*, the capital, is a large, fortified, populous, and commercial town on the left bank of the Kawara, in the north-eastern angle of intersection of 11° N. lat., and 5° E. long. The kingdom of *Nyffe* or *Tappa*, to the left of the Kawara, is divided between two brothers, one of them a Mahometan supported by the Fellatahs, the other a pagan. The capital of the former is *Tabra*, a town with 20,000 inhabitants, on the Mayarrow, an affluent of the Kawara. *Koulfou*, a little to the east of Tabra, is the most industrious and busy town in Nyffe, with 12,000 or 15,000 inhabitants. *Rubba*, a large, populous, and commercial town of Nyffe, near the left bank of the Kawara, seems to be in possession of the Fellatahs. It is a great entrepot of the trade of Soudan. *Egga*, to the right of the Kawara, a large and populous city, distinguished for the commercial activity of its inhabitants, who possess a large number of vessels with which they trade up and down the river. The *kingdom of Yarriba*, which extends from Pouka near Badagry, on the slave coast, to the frontiers of Borgou and the right bank of the Kawara, in 10° N. lat., is one of the principal states in this part of Africa; the kings of Dahomey, Alladah, Badagry, and Maha, are its tributaries, and Benin is an ally. The capital is *Eyeo* or *Katunga*, a large town 15 miles in circumference, built on the slope and round the base of a small chain of hills. It is surrounded by a wall 20 feet high, and a ditch; the houses are built of clay and thatched. The other principal places are: *Bohou*, a large town, formerly the capital; *Daffou*, with 15,000 inhabitants; *Jannah*, *Chaki*, *Kouso*, with 20,000 inhabitants. The kingdom of *Fundah*, *Fandah*, or *Founda*, which is very imperfectly known, extends along the Tchadda, and exercises dominion over a great part of the country situate to the left of that river. Its capital is *Fundah*, on the river Okwah, a small affluent of the Tchadda; which is said by Mr. Laird to be as large as Liverpool, and to contain about 60,000 or 70,000 inhabitants, who manufacture cotton stuffs, leather, good beer, and iron. *Jamnahar* or *Ymahah* on the Tchadda, is the port of Fundah in the dry season. The *kingdom of Benin* or *Adou*, one of the most powerful in Soudan, extends along the coast from Lagos to Bonny, and 20 days' journey inland; thus including a large portion of the delta of the Kawara; but the interior is still very little known. The capital is *Benin*, a town with about 15,000 inhabitants, 70 miles from the coast. *Wari* a small town with a population of 5000, the capital of a small dependent kingdom of the same name, is inhabited by the Jackeris, a negro race remarkable for their industry, and the mildness of their manners, which form a singular contrast with the ferocious habits of their neighbours, the people of Benin. *Bonny*, a town with 20,000 inhabitants, on an island at the mouth of a branch of the Kawara, is the capital of an oligarchic republic tributary to Benin. It was recently the greatest slave market in Guinea, and is still one of the most extensively commercial towns. *Brass*, a trading town on a creek of the river Nun, west of the Bonny river; with 2000 inhabitants. The *kingdom of Qua* extends from the St. Anthony or Andony river to the Rio del Rey. Its capital is *Old Calebar* or *Bongo*, and its inhabitants, though idolaters, are somewhat civilized. The Old Calebar river forms a wide estuary, navigable for large vessels up to *Ephraim* town, which is governed by a chief who assumes the title of Duke; it contains about 6000 inhabitants. On the lower part of the Kawara are several places, which our information does not yet enable us to assign to any of the great political divisions. *Boqua*, *Bockwey*, or *Iccory*, on the left bank of the river, immediately below the hills, is a sort of free port or neutral place, where the people of hostile states may meet without danger. *Atta* or *Itta*, *Addah* or *Iddah*, 7° 40′ N., also on the left bank, is a large town with 15,000 inhabitants. *Damuggo*, on the left bank, 40 miles below Attah, is the seat of a chief who possesses a flotilla. *Kirri* or *Kurree*, a large town on the right bank, 25 miles below Damuggo, is one of the principal markets in Soudan. *Ibou*, *Eboo*, *Ebboe*, a small town of 6000 inhabitants, not far from the right bank of the Kawara, is the capital of the kingdom of Ibou, and one of the principal marts of the lower part of the river.

The principal states included in the BASIN OF THE TCHAD are the following: — *Bornou* is situate along the sides of the great lake, and seems to consist of *Bornou Proper*, to the south-west of the lake; *Kanem* to the north and east; *Loggun* to the south; a part of *Mandara*, to the south of Loggun; and a part of the country of the *Mungas* or *Mungowi* to the north of the Yeou. The capital is *Birnie* or *New Bornou*, a walled town with 15,000 inhabitants, not far from the Tchad. The other principal places are: — *Kouka*, a small and recently built town, the residence of the Sheikh El Kanemy, who was the actual ruler of Bornou in 1826; *Angornou*, the largest and most commercial town in the empire, with 30,000 inhabitants, besides strangers; *Digoa*, a large walled town, with a population of 30,000; *Birnie* or *Old Bornou*, on the Yeou, formerly the capital, is now entirely ruined; but an extensive space covered with the remains of buildings still attests its ancient importance, when it contained 200,000 inhabitants. *Gambarou*, once a large town on the right bank of the Yeou, is also in ruins; *Delow*, sometime the capital of Mandara, with 10,000 inhabitants; *Mora*, the present capital of Mandara; *Maou*, the capital of Kanem. The *kingdom of Baghermeh*, situate to the south-east of the lake, borders on Bornou, but its extent is unknown. The inhabitants are noted among the Africans for their bravery and their industry. *Mesna* appears to be its capital. The *kingdom of Mobba* called *Dar Szaleh* by the Arabs, *Wadai*, by the people of Fezzan, and *Borgou* by the Bornouese, is too imperfectly known to be described. Its capital is *Warra*, which is said to be three times larger than Boulak near Cairo. Only a part, however, of the kingdom seems to belong to the basin of the Tchad. The same may be said of *Dar-Fur*, a considerable territory situate between Dar-Szaleh and Kordofan, and of which the capital is *Kobbe* or *Cobbe*, which was visited by Mr. Browne in 1793. It is a dry desert country, lying between the basins of the Tchad and the Bahr-el-Abiad.

The EMPIRE OF THE FOULAHS or FELLATAH belongs partly to the basin of the Kawara, and partly to that of the Tchad, but the larger portion may be assigned to the former. It was founded by the Sheikh Othman Danfodio, who was a proficient in all the learning of the Arabs, and enjoyed the reputation of being a prophet. He came originally from the woods of Ader or Tadela, and, having settled in Ghoober, built a town, where the Fellatahs soon began to collect round him. Driven from it by the Sultan, he again settled in Ader, where he built another town; from all quarters Fellatahs flocked to his standard; and in the course of a short time he acquired possession of the whole of Haoussa, with Kano Kubbe, Youri, and part of Nyffe, and extended his ravages almost to the sea-coast. He died in 1816, when his son Bello succeeded to the government of Haoussa; while the conquered territories to the westward were given to his nephew. *Saccatoo*, the capital, is a large city on the top of a low hill near an affluent of the Kawara, about four days' journey from the great river. It was built in 1805 by Danfodio, and has been surrounded by Bello, with a wall 24 feet high, and a dry ditch. Its population is estimated at 80,000. The other principal towns are: *Kashenah*, *Cassina*, *Kashna*, formerly a large city, but now so reduced as to occupy only about a tenth part of the enclosure within its wall; *Kalawawa*, the chief town of Ghoober; *Zirmi*, the capital of Zamfra; *Zariya*, the chief town of Zegzeg, a new town built by the Fellatahs, and containing 50,000 inhabitants; *Magaria*, in Ader, a fine town built by Sultan Bello, which is becoming daily more considerable; *Kano*, the principal mart of Central Africa, a large town with 40,000 inhabitants, is about 15 miles in circumference, and is surrounded by a wall 30 feet high and two dry ditches; but the interior is divided into two by a bahr or morass, which forms a lake in the wet season; *Baebaegie*, in the province of Kano, is a large town with several stone houses, and from 20,000 to 25,000 inhabitants, all devoted to commerce. *Kotonko*; *Zangaeia*; *Katagoum*, on an affluent of the Yeou, one of the principal fortresses of the empire, with 7000 or 8000 inhabitants.

SOUTHERN AFRICA.

THE whole of the continent south of the equator is properly entitled to this appellation; but the limits of the division may be extended a little further north, so as to include the unknown regions which have the great central chain, or supposed chain, of mountains for their northern border, or in other words, to a line drawn from the Cameroons on the Bight of Biafra to the Gulf of Aden. The region may be divided into four portions, the first three of which we shall describe separately, namely, 1. *The Maritime Regions on the West Coast*; 2. *The Maritime Regions of the East Coast*; 3. *South Africa*; and 4. *The Unexplored Interior*, respecting which nothing is known.

§ 1. *Countries on the West Coast.*

These countries, in former times, were usually denominated *Lower Guinea*. The portion extending from the Cameroons to Cape Lopez, is called the *coast of Gabon*; but almost nothing is known of the interior. The evidence, however, which we already possess on this subject goes to prove that along the coast, through 1000 miles in latitude, and probably 40 miles to seaward, there is a constant evolution of sulphuretted hydrogen gas, the breathing of which is extremely injurious to health: and, says Professor Daniel, it is not improbable that our cruisers on the coast are exposed to its exhalations given out from the ocean under a tropical sun, over an area of 40,000 square miles in extent. This he ascribes to the circumstance of the numerous rivers which flow into the Bight of Biafra, from a richly wooded country, bringing down much vegetable detritus, and forming deposits of mud at their mouths; and that thus the most favourable conditions for generating sulphuretted hydrogen are present, in this very case in which so large a quantity of the deleterious gas is found.—*Trans. of Africa, Feb.* 1841.) The only place of any importance on the coast is *Naango* or *Georgetown*, the principal slave market. It is situate on the river Gabon, which flows into Corisco bay, to the north of the equator.

Loango appears to extend from Cape Lopez to the Zaire, or some miles farther, and includes a number of different states or petty kingdoms which we need not particularise. The coast is high and abrupt, but the hills are covered with soil and luxuriant vegetation. The soil is generally a red loam, and very productive; but near the coast is an extremely fine sand. The lakes and rivers abound with fish, and the forests with wild beasts. The climate is excessively hot. Rain sometimes falls; but the dews are sufficient for vegetation. Almost the only grains cultivated are manioc, maize, and a species of pulse called msangen; but the greater part of the country is covered with tall grass. The finest fruits grow wild; sugar-cane attains an extraordinary size; palm-trees are very plentiful. Potatoes and yams are also very abundant. The Chinese hog is the only animal reared for domestic use. The people reside in villages, or clusters of straw huts in the midst of palm groves. They are in the lowest state of degradation, indolent, debauched, filthy, cowardly, and superstitious. The capital of all the country is *Loango* or *Bawru-Loango*, situate in a large and fertile plain, about two miles from the coast, in 4° 36′ S. lat., and is said by M. Grandpre to have a population of 15,000. The other principal towns are: *Kingulle*, the capital of Ca-Congo; *Malemba*, a great slave market on the coast; *Cabenda*, in Ngojo, in a beautiful situation, with a fertile soil, and a good harbour, is one of the principal slave markets on the coast.

CONGO, as originally known to the Portuguese, extended from Cape Lopez to Cape Negro, including not only Congo Proper, but also Loango, Angola, and Benguela; but its limits seem to be now restricted to a small territory, stretching along the left bank of the Zaire. Near the sea the country is low and flat, traversed by numerous streams, and abounding in sandy deserts, but in general very fertile. The climate is very pestilential. The interior consists of a number of terraces or acclivities forming a fine, rich, and populous region. The principal physical feature is the great river *Zaire*, called also *Congo*, *Barbela*, *Moinzi-Enzaddi*, and *Zambere*, which enters the Atlantic Ocean with a great body of water in 6° 5′ S. lat. Immediately off its mouth, in the current of its channel, Captain Tuckey found no bottom with 150 fathoms of line; and it was observed, that though the current made a rippling noise, resembling that of a mill sluice, yet it was seldom found to exceed 4½ or 5 knots an hour, and in many places not more than 2½. At its mouth it is 10 miles wide; a little higher up it diminishes to 7; and at 140 miles from the sea, narrows commence, and continue for 40 miles, through which space the river is generally not more than from 300 to 500 yards wide, and generally confined between rocks. Above the narrows, for about 100 miles, the river again expands to the width of two, three, and even more than four miles, flowing with a current of two or three miles an hour. Higher up, the natives stated to Captain Tuckey, that they knew of no impediment to the continued navigation of the river, and that the only obstruction in its north-east branch was a single ledge of rocks, forming a sort of rapid, over which, however, canoes were able to pass.—(*Narrative of an Expedition to Explore the Zaire, &c.* in 1816. Of its origin and affluents nothing positive is known. It overflows in the rainy season to the height of 12 feet; and has also risings in the dry season to the height of 7 feet. The banks are clothed with a most luxuriant vegetation. The country is divided into a number of petty states, each governed by a chevou or chief, acknowledging the supremacy of Blindy N'Congo, who resides at Banza-Congo. The Congoese belong to the least favourable race of negroes, and are sunk in the lowest state of degradation and superstition. Their religion is fetichism, with a mixture of Christianity introduced by the Portuguese, and idolatry; but the people are said to be sincere, hospitable, and compassionate.

ANGOLA, DONGO, or AMBONDE extends to the south of Congo, being about 350 miles from E. to W., and 50 or 60 from N. to S. It is properly a part of Congo, from which, however, it has been politically separated since the middle of the 16th century. It is extremely mountainous, being destitute of plains, except on the sea shore, with some small flats on the sides or in the gorges of the mountains. It is extremely well watered; the principal streams are the *Coanza*, *Benga*, and *Pamda*, the first and last of which form the southern and northern boundaries of the country. The soil on the coast is sandy but not desert; in the interior, it is rich and productive. The climate is excellent, and the heat temperate. Gold and silver have been discovered in the mountains near the coast; but no gold dust has been found. Iron is plentiful, and copper is also said to exist; lead, sulphur, and petroleum are its principal mineral productions. Every species of tropical vegetation is abundantly produced; and all the animals common to intertropical Africa are found. The people are black, but have few of the negro peculiarities in form or feature; blue eyes and red hair are not uncommon among them. The population is said to be dense. The capital, *St. Paul* or *Loanda*, is said to contain 8000 inhabitants.

The Portuguese established a factory on the coast in 1485, and their power has been constantly extending ever since; they have one establishment 700 miles inland, and exercise great influence over

the numerous petty chieftains among whom the country is parcelled out. The chieftains, however, are all subject to a sort of king, called the Incue. The principal articles of export are ivory and slaves, the latter of which are carried off in great numbers to Brazil.

BENGUELA extends along the coast from the Cowara river to Cape Negro, or from 9° to 16° S. lat., a distance of about 460 miles. It appears to be mountainous, and watered by a great number of streams; and the elevation of some parts of the country is so considerable as to occasion a great degree of cold. Dense forests of cedars, palms, boobash, date-trees, tamarinds, and other tropical trees, with some which belong to the temperate zone, clothe the sides and the tops of the mountains, mixed with vines, bananas, and other species of fruit-trees of the finest quality; but, owing to the indolence of the people, grain is not very abundant. Wild animals are extremely numerous; and also cattle, sheep, and goats. The mountains yield copper, sulphur, petroleum, and crystals. The coast is excessively unhealthy; but the interior is salubrious. The rainy season lasts generally throughout May and June; but it is very irregular, and sometimes no rain falls for three years in succession. The country is chiefly inhabited by petty tribes of independent and very savage barbarians; the most noted of whom are the *Gagas*, *Gigas*, or *Jagas*, a wandering set of robbers, who acknowledge no tribe or nation. They destroy all their own children, and keep up their numbers by stealing others. They are bold and skilful soldiers, but ruthless cannibals, without the slightest idea of art or industry, carrying destruction and desolation to every place they visit. The Portuguese have long had settlements on the coast and in the interior; but their power does not seem to extend far beyond their forts. Their principal settlement is *San Felipe de Benguela*, a small town with a fort in an unhealthy situation, on a bay of the north coast, 12° 40′ S. lat. The rest of the coast to the south of Benguela is a sandy desert without water, scantily peopled, or traversed by the Cimbebas and Damaras.

§ 2. *The East Coast.*

From Bab-el-Mandeb to Cape Guardafui, the coast extends eastward for about 600 miles, forming the southern border of the Gulf of Aden. This, as well as the country of Ajan, to the south of Cape Guardafui, as far as the river Juba, a little to the south of the equator, has no other distinctive name than *Barra Somauli*, or the land of the Somaulis, a people who live in numerous independent tribes. They are a mild race, of pastoral habits, and confined entirely to the coast, the whole of the interior being occupied by the savage Gallas, and appear to be the descendants of the aborigines of the country, who were early converted to Islam by the Arabs, who traded with them. The north coast, sometimes designated on maps *Adel*, has three towns, which are little visited by Europeans. *Zeila*, a small town of 500 inhabitants, inclosed by ruinous walls, and possessing a shallow harbour; and *Tajurrah*, a mere village, of 70 or 80 wooden huts, but with a capacious harbour, and good anchorage, were recently (1839) subject to the Pasha of Egypt. *Berbera*, *Barbara*, or *Burbureen*, remained unknown in Europe till 1826; it is situate on the coast, 220 miles S.E. of Bab-el-Mandeb, and may be described as a large encampment, rather than a town, the permanent residents, during the hot season, not exceeding 100 families; but from September to April, there is an annual fair or mart, at which sometimes so many as 10,000 people are assembled, who live in tents formed of sticks covered with skins. Their great object is to barter the produce of the inland country for goods brought from Arabia. The chief articles exported are ghee, coffee, sheep, gum, myrrh, ostrich feathers, gold dust, hides, skins, and slaves. Coffee is brought from a distance of 40 days' journey in the interior, and as it forms the principal part of the return cargoes of the vessels, the quantity exported must be very great. The whole trade is in the hands of Baniars. Cape Guardafui, named *Ras Aseré* by the Arabs, is a bold headland, immediately to the south of which is the *Jebil Jordafún*, a high mountain, from which the European name of the Cape itself seems to be derived.

From Guardafui the coast extends in a south-westerly direction, but with various windings, to the Cape of Good Hope, under the various names of *Ajan* or *Ajen* (Arab *Haxiné*, *i.e.* the rough ground), *Zanguebar*, subdivided into *Magadoxa*, *Melinda*, *Zanzibar*, and *Quiloa*; *Mozambico* or *Moxambique*; *Sabia*, *Inhambané*, and *Caffraria*. This long sweep of 3000 miles is chiefly occupied by negro tribes in a state of great barbarism; though some of them are numerous, and not quite destitute of arts and industry. Arab colonies are also to be found at various places along the coast. The sovereignty, as far as the river Mozimba, to the south of Cape Delgado, is claimed by the Sultan of Muscat; the remainder, as far at least as Delagoa bay, by the Portuguese; but the only territory which the latter really possess is the Captaincy of the *Rios de Senna*, which contains about 3600 square leagues. The town of the same name is situate on the Zambeze river, in 17° 30′ S. lat., 35° 15′ E. long. This Portuguese territory is traversed by the great river *Zambeze*, which enters the Indian Ocean in lat. 18° S., by five principal channels, named the *Luaboel*, *Luabo*, *Couama*, and *Quilimané*. Its sources are unknown, but the river is said to be navigable for canoes for 300 leagues. The lower part, however, of its course has been found to be scarcely navigable by larger vessels, even boats, owing to the great rapidity of the current, and the numerous sandbanks with which its bed is choked and divided. It has many considerable affluents; and so great is the rush of the floods from its various mouths, that, four miles from the land, the water is perfectly fresh.—(*Journal R. Geog. Soc. Lond.* II. 136; III. 204.) Proceeding along the coast southward from Cape Guardafui, the first place worthy of notice is the peninsula of *Hafoon*, which projects a considerable distance seaward, appearing like an inland. *Magadoxa*, or *Mukdeshu*, or *Mukdesha*, 2° 1′ 8″ S. lat., 45° 19′ 5″ E. long., is a considerable town with an imposing appearance, the buildings being considerably large, and of stone, overtopped by four minarets. But these are only tenanted by the dead, the living population being resident in low thatched huts. *Brava*, within the territory of Magadoxa, is also a port of some importance. *Melinda* or *Maleenda*, once a flourishing city, has been totally destroyed by the savage Gallas. *Mombaz*, 4° 4′ S. lat., a town in possession of Arabs, is only a mass of huts, hovels, and ruins. It is situate on a small island on a bay or gulf, which forms, perhaps, one of the most perfect harbours in the world. The island is surrounded by cliffs of madrepore, capable of being rendered, by very little labour, almost impregnable. Farther south are the two large islands of Pemba and Zanzibar. *Pemba* is 30 miles in length by 10 in breadth, and 18 from the mainland; it is low, and rests on a coral foundation, but is covered by a most productive soil, yielding every kind of produce, especially rice, and being in fact the granary of the neighbouring country. *Zanzibar*, 25 miles S. of Pemba, is about twice the size, but resembles it in almost every other respect, producing abundantly grain and sugar; but the climate is unhealthy. They both belong to the Sultan of Muscat. The foreign commerce of Zanzibar is considerable, and almost entirely in the hands of the Americans and English; the Sultan farms out the customs for about £30,000 a-year. *Quiloa* (Kealwa) once a large and flourishing city, has now dwindled to a mere village, governed by the Muscatese officers. *Cape Delgado* is situate in 10° 40′ 2″ S. lat.; and immediately to the southward is the extensive line of the *Querimba Islands*, which are all composed of coral, low, of various sizes, and abounding with excellent harbours, which afford perfect security in the heaviest gales.

Within the Portuguese territory, besides Senna, already mentioned, the principal places are:—*Mozumbique*, *Quilimané*, *Sofala*, *Inhambane*, and *Bahia de Lourenzo Marques* or *Bahia da Alagoa*. The harbour of *Moxambique* is formed by a deep inlet of the sea 5½ miles broad and 6 long. At the entrance are three small islands, which, together with reefs and shoals, render the anchorage perfectly safe in the worst weather. The islands are formed of coral, and named *Moxambique*, *St.*

§ 3. *South Africa.**

The name "South Africa" though properly applicable to the whole of that portion of the continent which lies south of the Equator, is usually restricted by its European possessors to the country at the extremity of the African continent, between the Cape of Good Hope and the countries possessed by the various aboriginal tribes with which the colonists have intercourse. In this sense the term must be five hundred miles from the Atlantic to the Indian Ocean; while the country extends southwards through nearly [illegible] degrees of latitude, to Cape L'Aguilhas, or to the extremity of the continent, the northern limit may be formed by a diagonal line drawn from Walvisch Bay, on the west coast, to Delagoa Bay on the east coast. Of this region, the *Cape Colony* occupies the southern extremity, to the extent of about 650 miles in length from east to west, with a mean breadth of 230 miles, rising an area of 150,000 square miles, and having a sea-coast line of about 1200 miles.

GENERAL ASPECT.—South Africa is generally composed of long mountain ridges, extending in a direction nearly parallel to the sea-coast, with intervening plains and valleys, which rise by successive stages to the table-land of the interior. Within the colonial territory these mountains consist of three distinct ranges. The first named *Lange Kloof* runs parallel to the south coast, at the distance of from 20 to 30 miles. The second range, named *Zwarte Bergen* Black Mountains, is considerably higher, and more rugged, consisting often of double and even triple ridges. The belt of land between this range and the former, is nearly equal in width to the low land on the sea-coast, but is at a considerably great[illegible] elevation. Beyond another plain of 80 to 100 miles wide, soars the lofty *Nieuwveld Gebirge* Newland Mountains, the highest range of South Africa: the summits of which are generally covered with snow, being estimated to exceed the elevation of 10,000 feet. Farther north, the country begins to fall towards the Orange, and the great part of the region yet explored forms the basin of that great river with its tributaries. The Nieuwveld Gebirge are recognized to the north-west under the name of *Roggeveld Bergen*; eastward, they take the names of *Winterberg* and *Sneeuwbergen*, and are further prolonged in the same direction to an unknown extent, forming, probably, a part of the great range called the backbone of the World. The other two ridges are pronounced, in the same manner, to the north-west, and to the north-east, with frequent interruptions, no doubt, but still with sufficient continuity to warrant us in considering the [illegible] elevations as portions of the same range. The principal summits of these mountains are the *Sneeuwberg* or *Compassberg*, in Graaffreynet, 7[illegible]0 feet; *Komdoorn*, on the border of Beaufort, Graaffreynet, and Worcester, 5[illegible]0 feet; *Kammanassie*, the northern part of Graaffreynet district, 6000 feet: Mr. Martin says from 4000 to 5000; and there is a missionary station within 200 feet of its highest peak. The *Winterberg*, on the eastern frontier, believed to be the highest in the colony, but its height has not yet been ascertained. The plain between the sea and the Lange Kloof is covered with a deep and fertile soil, watered by numerous rivulets, well clothed with grass, and containing a beautiful variety of trees and shrubs. Rains are frequent, and the country enjoys a more mild and equable temperature than the other plains. The plain or terrace, above the Zwarte Bergen contains a considerable proportion of well-watered and fertile lands; but these are mixed with large tracts of arid desert called *karroos*. Above the Zwarte Bergen the third terrace is chiefly occupied by the *Great Karroo*, a vast plain 300 miles long, by nearly half as broad, which is raised about 3000 feet above the level of the sea, and exhibits every where a hard clayey surface, thinly sprinkled over with sand, but studded with isolated hills, and a few stunted shrubs. The eastern portion, however, of this terrace, along the foot of the Sneeuwbergen, is a finely watered and fruitful tract, affording very rich pasturage in its numerous valleys. To the north of the Sneeuwbergen, the country gradually becomes more open, and extensive plains spread before the eye, which are covered with wild animals of every kind. The land declines towards the north, with many insulated hills, which rise abruptly, and stand like sugar loaves upon a table. Further to the north and north-west, along the Cradock river, is an extensive and almost boundless landscape, adorned with natural groves, and opening into extensive plains, covered with long grass, and studded with acacia and in some parts thinly sprinkled with mimosas. Such is the country towards Latakoo, which between that place and Delagoa Bay is described as equally fine. Westward, down the course of the Gariep, the country becomes more and more sterile, and extensive sandy tracts stretch for hundreds of miles on both sides of the river. The country west of the commencement of the Roggeveldt mountains, between 29° and 30° S. lat., appears to be a great inclined plain, the first part fading gradually from the Nieuveldt ridge to the Gariep, sprinkled over with singular piles of rocks which assume the most grotesque appearances. Still further north, these plains are covered with low brushwood with here and there beds of salt; and, in one place, a valley of six miles wide occurs, which is entirely composed of naked salt, and appears to be occasionally covered with water. This vast saltpan is sup[illegible]

* The usual appellations of the southern part of this region are, *The Cape of Good Hope*, or *The Cape Colony*, the most awkward and inappropriate names that can be given to a large country. It is probably not easy to find another; but it has occurred to us that a good designation might be formed from the Portuguese name of the Cape, slightly modified, namely, SPERANZA.

posed to be about 40 miles in circumference; the surface is a fine dry salt, of a brilliant whiteness; and the soil of the country adjoining is composed, in some places, of a sharp gravelly decomposed schistus; in others, of a calcareous stratum strewed over with flints. The western part of this desert is prolonged beyond the colonial limit into Namaqualand, which extends along the coast, on both sides of the Gariep, to about 200 miles north of the river, and for the same distance eastward, in which direction it is separated from the Betchuana country by an extensive tract, which is uninhabitable for want of water. The soil of Namaqualand is in general light, sandy, and thinly clothed with tufted grass. Some plains, however, are reported to be much more fertile in pasturage than the rest of the country; and here and there are scattered copious fountains which afford eligible situations for permanent villages.

At the very southern extremity of Africa is the Cape Peninsula, a singular tract about 36 miles long and 8 broad, composed of a broken series of mountains, with flat or conical summits, which are connected by lower gorges, and joined to the continent by a low, flat, sandy isthmus, 20 miles wide, between Table Bay and False Bay. The peninsula may indeed be said to consist of two mountainous tracts, separated by a sandy isthmus between Haut Bay and Fish-hook Bay. Within the peninsula are several remarkable mountains, the heights and names of which are: *Table Mountain*, 3582 feet; *Devil's Peak*, 3315; *Lion's Head*, 2760; *Lion's Rump*, 1143; *Muyzenberg*, 2000; *Elsey Peak*, 1200; *Simon's Berg* or *Signal Hill*, 2500; *Paulusberg*, 1200; *Constantia*, 3200; *Cape Peak*, 1000; *Hanglip Cape*, 1800 feet. Of these the most conspicuous is Table Mountain, the northern front of which, directly facing Cape Town, and rising from the bay like the ruined walls of a gigantic fortress, presents an almost horizontal line of two miles in length, with a plain at the top of about ten acres in extent. In front are two wings, named the *Devil's Peak*, and the *Lion's Head*, which evidently formed, at one time, a continuation of the table, and have their bases still attached to Table Mountain, at a considerable height. The Devil's Peak is broken into irregular points; but the upper part of the Lion's Head is a solid mass of stone, fashioned like a work of art; and resembling, it is thought, in some points of view, a dome placed on a high conical hill. The flat summit of Table Mountain is occasionally overspread with a mass of white clouds, well known as the *table-cloth*, but the "magnificent apparition dwells only on the mountain's top." This is called the *Table-cloth* by Englishmen, but the French call it *la perruque*, the wig. It commences by a small white or fleecy cloud, which remains for some time stationary over the summit of the Lion's Rump; it then gradually increases until it covers the whole Table, when it becomes a dark grey in the middle, while its edges still remain white. After continuing for some time, it slowly mingles with the atmosphere, until it finally disappears without rain or mist. A strong south-east wind commences immediately after the mountain is completely covered, which often blows in squalls excessively strong, and generally continues for two or three days. It blows very hard through the gap which separates the Table from the Devil's Peak, driving the white clouds in rolling fleeces like wool along the sides of the mountains; ships are frequently torn from their moorings, or bring their anchors home, and are driven out of the bay with all their anchors a-head; but the moment they are outside of the bay, they find nothing more than a single or double-reef breeze. But this phenomenon presents itself only when a strong south-east wind may be expected. Though very rugged, the mountain may be ascended on horseback; the experiment, however, is very dangerous.

Beyond the eastern limits of the British territory, the coast extends in a north-easterly direction to Delagoa Bay. The most southernly portion is possessed by the Caffers, from whom it has received the name of *Caffraria* or *Cafferland*, and forms a tract of country clothed with the finest pasturage, far superior, in general, to that within the colonial boundary. The face of the country evidently improves as it extends farther to the eastward; most of the streams are free from the admixture of saline matter, which is peculiar to those adjacent to, and within the colony, and which renders them not only unpalatable, but in some cases highly injurious. The coast is much bolder than that which skirts the colony; but, respecting the country beyond the mountains, nothing accurate is known. It is said, however, to be highly delightful, abounding with wood and water, diversified with ridges and valleys, and clothed with rich herbage. The mountains which separate it from the Betchuana country on the north, and from the Amakosas on the south, are exceedingly rugged, particularly the former range, which is of a very formidable and rugged character, presenting a succession of the most frightful precipices, supporting, like huge buttresses, the inland plains and deserts. The terrace plain between the two ranges, extending from the colonial frontier to the neighbourhood of Natal, a distance of at least 400 miles, and comprising an area of about 24,000 square miles; and even the whole of the country between the mountains and the sea, to a distance of 200 miles beyond the Amapondas, is unoccupied by man: it may therefore be fairly calculated that the waste lands bordering on Caffraria do not fall short of 40,000 square miles. From the Keiskamma to Delagoa Bay, the sea boundary, is one of the most varied and interesting that can possibly be imagined, presenting every diversity that rich hills and fertile meadows can produce; the mountainous range which separates the sea border from the interior is in some places 6000 feet high.—(*Owen's Voyage*, I. 70.) It is within this fine country where there is such ample room for colonists, that the British Governments have been strongly urged to found a settlement at *Port Natal*; where already a number of Dutch boors from the Cape territory have established an independent state. The country is well wooded with large timber, and watered with upwards of 100 rivers and running streams, some of which are larger than the principal rivers of the Cape Colony. The soil is so fertile as to produce three crops of Caffer and Indian corn in the year. The rains are periodical, and the climate is cooler than that of the Cape, and highly salubrious.

The soil throughout the colony is very varied: in some places it consists of a naked sand, in others, of a stiff clay, and in many parts, of a rich dark vegetable mould. Often the surface appears a dry sand, but on digging to the depth of a few inches, a black mould is found beneath; the stiff clayey soil, sometimes red and sometimes yellowish, is very fertile when irrigated. The east coast-border is generally an alluvial loam, as is the case with many valleys, particularly among the ravines and windings of the Fish river. The surface of the great Karroo is diversified: in many places the soil is a stiff brownish coloured clay; in some parts a bed of sandstone, crossed with veins of quartz, and a kind of ponderous ironstone; in others, a heavy sand, with here and there a blackish loam. Near the bed of the Buffalo river the whole face of the country is covered with small fragments of a deep purple-coloured slate, which have been detached from strata of long parallel ridges. Scattered among these fragments are black stones, resembling volcanic slags, or the scoriæ of an iron furnace. Conical hills, some of which are truncated, stand detached on the plain, and are composed of alternate layers of earth and sandstone. Some flat sandy marshes of the Karroo are overgrown with rushes, and abound with strong salt springs, contiguous to which a kind of salt wort grows in perfection; the surface around its roots is generally covered with a fine white nitrous powder.

Of *Minerals* few have yet been discovered. Indications of coal have been met with at the Kroom river, and in some other places. Near the Bushman's river, in Uitenhage, an extensive vein of alum has recently been discovered, which is particularly beautiful, very pure, and valuable as an article of commerce. At Camtoos bay a rich galena has been found in the sides of a deep glen, in quartzose sandstone of a yellowish colour, which is easily broken. This ore, when assayed by Major Van Dheu, yielded from 200 pounds weight, 100 pounds of pure lead, and 8 ounces of silver. Mineral waters exist in different places: and there are numerous salt lakes and ponds which supply the colonists with that necessary article. There are also several singular salt-pans, some of which are 200 miles

from the sea, and from 3000 to 6000 feet above its level, covered with hard salt, from 5 to 6 inches thick. The largest and finest of these is near the Zwartkops river, where the salt on all sides of the pan is a deep vegetable earth, resting on a bed of clay, and without a trace of salt in its composition.

Along the east coast are found immense heaps of shells, in various places several hundred feet above the level of the sea, and generally in the greatest quantity in sheltered spots. At Saldanha bay is a cave 200 feet above the sea-level, which contains a large quantity of different kinds of shells peculiar to the coast; and behind Table Mountain, at a smaller height, are beds of shells buried under vegetable earth and clay. Seven miles N.E. of Uitenhage, and ten miles from the sea, are immense beds of sea shells, particularly of oysters, the fish of which are petrified.

From the Cape, along the south coast, to Algoa bay, a bank with various soundings projects out to sea, called the *bank of L'Agulhas*. The extreme point is nearly in the longitude of Cape Vaches, 22° E., and 37½° S. lat., about 200 miles from the shore, where it quickly converges, and assumes a narrow conical form, with very deep water at its southern end. It is probably the cause of the strong current which sets to the south and west, and is generally strongest during the winter months, running with the greatest velocity along the edge of the bank, or a little outside of soundings. When opposed by adverse gales a very high sea is thrown up, which sometimes lessens the strength of the current. By keeping on the edge of the bank a ship will be carried 80 miles a-day with an adverse wind, round the Cape into the Atlantic; but towards the shore the rapidity of the stream becomes gradually less, and the sea smoother.

CLIMATE.—In respect of heat, the southern portions of this region enjoy a very mild temperature, which seldom rises above 100° of Fahrenheit. In a meteorological register, kept at Capetown, from September 1814 to September 1821, the greatest heat was found to be 96°, the lowest 45°; the mean annual temperature scarcely 68°; of winter, 61°, of summer, 89°; of the warmest month, 97°, of the coldest, 57½°. In short, it corresponds as nearly to Funchal, in Madeira, in climate as in latitude, though on the opposite side of the equator. The mean annual temperature is the same, with this difference, that the winters are somewhat colder, and the summers warmer. During summer, which continues from September till the end of March, the wind blows from the south-east, and often with great violence. From March till September the north-west wind prevails, and is accompanied by pleasant weather, or rains, which are almost constant in June and July. In different parts of the country, however, the meteorological phenomena are much varied, according to the direction and height of the mountains. In Albany and the eastern districts, the climate much resembles that of England; the mountain tops are occasionally covered with snow, which, however, rarely falls in the valleys; the winter nights are sharp and clear, while the summer heats are moderated either by the sea breeze, or by the currents of wind which are continually at play among the hills and mountains. The climate, generally speaking, is very salubrious, but the weather is neither steady nor always agreeable; nor is it suitable for agricultural purposes. The deficiency and irregularity of the rains are great drawbacks. In the south-western districts rain, in the cold season, is profuse, but in summer it is of rare occurrence, and then the ground is parched up. In some of the northern tracts bordering on the Great Karroo there is sometimes no rain for three years in succession; and even in more favoured districts the rain, when it does come, falls in torrents, and does great damage. Sometimes the south-east wind is at first, besides being excessively hot, loaded with impalpable sand; but as the breeze continues it gradually cools and becomes supportable.

VEGETABLE PRODUCTIONS.—"The vegetation of South Africa is unique, varied, and beautiful. Indeed, there are so many varieties of plants at the Cape, that when Linnæus received a large number of specimens, he remarked to his correspondent,—'You have given me the greatest plenty, but have thrown my whole system into disorder.'" Nowhere can the botanist find a richer and more delightful field for his pursuits than in Southern Africa. The *ericæ* or heaths have long been acknowledged pre-eminent in variety and beauty, flourishing equally on stony hills or sandy plains. An endless variety of frutescent or shrubby plants grows in wild luxuriance, some on the hills, some in the deep chasms of the mountains, and others on the sandy isthmus of the Cape; but it is singular that of the numerous *proteæ*, produced indiscriminately on almost every hill in the colony, the *Protea argentea* is confined to the base of the Table Mountain, and has not been found in any other part of the world. The *Conocarpa* (*Kruipel broom* of the Dutch) grows along the sides of the hills: its bark is used for tanning leather, and its branches serve for firewood. The Palma-christi (castor-oil plant) and the aloe are every where found in great plenty. The dwarf mulberry flourishes, and the myrica cerifera, from the berries of which a firm and pure wax is procured by simple boiling, is found wild in abundance on the heathy sides of the hills. Avenues of oak (durmast) trees, and plantations of the white poplar, stone-pine, and others are to be seen near most of the country houses. The most valuable trees, however, are the stink wood, a kind of quercus peculiar to South Africa, and the geelhout or yellow wood, both of which are excellently adapted for building, furniture, and all domestic purposes: these trees generally attain a height of 50 feet, with a diameter of 10. There is besides a great variety of other useful timber-trees. In the neighbourhood of Grahamstown the curtisidendron reaches the height of the oak, and in the spring produces large clusters of deep scarlet flowers from a dark velvet calyx. It is scarcely possible to imagine the brilliancy and beauty of its appearance, the whole of its branches being covered with blossoms. What in Britain are considered beautiful specimens of geranium, are here treated as garden weeds; the colonists indeed often form their garden hedges of the ivy-leafed geranium. The Karroo is chiefly covered with varieties of mesembryanthemum, crassula, stapelia, and euphorbia, and with tufts or bunches of wiry grass, which expand widely after rain. Several species of the indigo plant grow wild; the cactus or prickly pear thrives; various species of the cotton plant flourish in the eastern districts; the tea-plant has long been reared in the country, but no attention has been paid to its culture, though the East India Company's monopoly (owing to which it was neglected, and tried to be extirpated) is now abolished. Flax yields two crops in the year, and the tobacco-plant is large and of good quality. Of fruit there is every variety belonging to the tropical and temperate zones: oranges, lemons, citrons, figs, guavas, grapes, melons, pomegranates, shaddocks, quinces, jambos, loquats, peaches, nectarines, pears, apples, plums, mulberries, raspberries, strawberries, gooseberries, almonds, walnuts, chestnuts, hazelnuts, are all large, and of excellent flavour. There are also a great variety of grapes; a large white Persian grape (hanenapod or cock's foot) yields a delicious but costly wine; the grapes being fleshy, they are generally reared for the purpose of being converted into raisins. The vine is generally planted at the Cape in rows like gooseberry bushes; in some vineyards, such as Constantia, it is supported on frames, raised a few feet above the ground, or on lofty trellices, along which it spreads in rich luxuriance. On an acre of ground may thus be planted 5000 vines, which will yield 5 leaguers or pipes (560 gallons) of wine. The average wholesale price of the leaguer is 80 shillings. Culinary vegetables of every variety and of the finest quality are grown. The various grains cultivated are now much improved by the introduction of fresh seed from England, India, and Australia; new grasses have been laid down, and the system of turnip husbandry, commenced in the British districts, is extending among the Dutch farmers.

ANIMALS.—In Southern Africa are found some of the largest and also some of the smallest members of the animal kingdom. Among the beasts are the elephant, weighing 4000 lbs, and the black streaked mouse, only a quarter of an ounce; the giraffe, 17 feet high, and the elegant zenik or viverra,

only three inches; the ostrich, 6 feet high, and the creeper, a bird about the size of a cherry. Of the thirty species of antelopes known in natural history, Southern Africa contains eighteen; besides which, there is the largest of the eland or oreas, 6 feet high, together with the pigmy or royal antelope, which is little more than 6 inches. The springbok or leaping antelope is met with in herds of 4000 or 5000. The lion, the leopard, the panther, and various species of the tiger cat are indigenous. The wolf, the hyæna, and three or four different kinds of jackal are every where found; as also the ant-eater, the ironhog or crested porcupine, the viverra, the jerboa, and several species of the hare. Buffaloes are numerous in the woods and thickets; and many of the plains abound with zebras, quaggas, and gnus. In the mountains there are large troops of the dog-faced baboon, and swarms of apes and monkies of all sizes. Of the lion there are two varieties, the yellow, and the brown or black, of which the latter is the stronger and fiercer. Indeed, the strength of this species is prodigious, there being well authenticated accounts to prove that one can carry off an ox or a horse with nearly as great ease as a fox carries a goose. Elephants are met with in the eastern districts, and are more numerous as the country advances eastward. There are also two distinct species of the double-horned rhinoceros; and hippotamuses are numerous to the eastward, and as large as those of the Upper Nile. Birds exist in great variety; ostriches are numerous: the secretary bird (falco serpentarius) is peculiar to the Cape; it is the inveterate enemy of snakes, and on that account much cherished. Eagles, vultures, kites, pelicans, flamingoes, cranes, spoonbills, ibises, wild geese, ducks, teal, snipes, bustards, partridges, turtle-doves, thrushes, and humming birds of every sort are found in abundance. Many other beautiful and curious birds might be mentioned, but we have only room to notice two of peculiar character. The locust-bird, a species of thrush, congregates in places where locusts migrate, and feeds upon the larvæ of the insect. In 1828, Albany was overflown, and almost every vegetable substance consumed by locusts; but in a short time these were followed by myriads of locust-birds, which speedily cleared them off. The honey-bird, which is rather larger than a sparrow, is used by the natives for a singular purpose. When the Hottentots are in want of wild honey they go to a place which they think likely to contain the hives, and by a kind of whistle summon the honey-bird, which is always lurking in the neighbourhood. The bird soon appears, and actually guides the hunter to the very spot where the honey is deposited; he then takes his station on a bush, and waits till the honey is secured, when he becomes possessor of the vacant nest, and the share of the spoil which is invariably left for him. When the bird has eaten his fill, the hive is again closed with stones to prevent the badger from destroying the young bees; and, as there is always a plentiful supply of flowers, the bees, however often robbed, never suffer from hunger, nor do they sting unless when hurt. Ants are very numerous; but the visitations of the locust are now rare. Reptiles are not numerous; snakes are found, but few accidents from them occur. The boa constrictor of a large size has been killed near Natal, and also a new species of alligator; large crocodiles have been seen at Delagoa Bay. Fish are extremely abundant, and of every kind, in the bays and along the coasts. During the winter season, whales, porpoises, and sharks enter the bays, and seals and penguins frequent various parts of the coast.

Of domestic animals, the colonists possess those of Europe in abundance. The Cape horse is not generally large, but it is very hardy. The ox is large and clumsy, in consequenceof his wide branching horns and great limbs, and is of considerable strength. A stall-fed Cape ox weighs from 800 to 900 lbs. Dutch without the offal; the beef is excellent, if the animal has not been driven far without food across the Karroo. The Cape sheep are long-legged, small-bodied, thin in front, and have all their fat collected upon the tail and the hind part of the thigh. The tail is short, flat, naked on the under side, and weighs from 6 to 12 lbs. The fat when melted is like a vegetable oil, and is used by the Dutch as a substitute for butter, and by the English for making soap. The general weight of the sheep is from 40 to 60 lbs; the wool, if it may be so called, is a strong frizzled hair, which drops off in September and October, and is scarcely fit even for stuffing cushions. Merinos are now becoming extensively introduced. The Namaquas possess the handsomest and most vigorous breeds of domestic animals in Southern Africa. The oxen are equally strong as those of the colony, but are trained into three different classes; beasts of burden or draught, saddle oxen, and war oxen. The saddle oxen are much superior to the horse in supporting fatigue, but are inferior in swiftness. The war oxen seem peculiar to this nation. They are chosen from the most savage and ungovernable, and, being driven against the enemy, rush on them like wild bulls; they will even attack wild beasts.

PEOPLE. — Of the white inhabitants of the colony, the most numerous are the original European settlers, or their descendants, termed *Africanders*, and consist chiefly of Dutch, with a small intermixture of French Protestant refugees who left their country after the revocation of the edict of Nantes. In physical structure the Cape Dutchmen are a fine race; in some districts their stature and strength are gigantic; particularly on the frontiers, where little vegetable food is consumed, and where mutton stewed in sheep's-tail fat is the principal food throughout the year. In mental attainments they are by no means deficient, when they are educated in youth, and when a proper stimulus is given to the development of their talents. In the interior of the country corpulence is one of the chief beauties of a Dutch housewife; and the men are distinguished alike for their hospitality and bravery. Those who live by grazing, termed Vee Boors, are now the most numerous, and, probably, the wealthiest class. A numerous colony of British settlers was established in Uitenhage, Somerset, and Albany, on the eastern frontier of the colony in 1820. The other British colonists are principally confined to Capetown, or engaged in trade at different stations. Their character is similar to that observed in other colonies; shrewd, generally intelligent, attached to political liberty, careful of preserving it, hospitable, and enterprising.

The liberated slaves form the next most numerous class. They amount to 35,000, and may be divided into three classes: Malays, Negroes, and Africanders; the last being a mixed race, descended from a European man and a Malay or Negro woman. These classes keep themselves perfectly distinct, and will not intermarry. Many of them are nominally Christians; but the prevailing creed of the Malays is Islam.

The *Hottentots*, the aborigines of the country, are the next in number, but the least in importance and social worth, in the opinion of many of the colonists. At present, after two centuries of oppression, they probably do not amount to 30,000. When young they are clean-limbed, and well proportioned; with joints, hands, and feet remarkably small. In some the nose is flat, in others it is raised; the eyes are of a deep chestnut colour, very long, narrow, and distant from each other. The eyelids are rounded into each other exactly like those of the Chinese. Their complexion is a clear olive or yellowish brown; and the hair of the head grows in hard, knotted tufts, and when left to grow, hangs on the neck in hard twisted, fringe-like tassels. Their cheek bones are high and prominent, forming with a narrow pointed chin nearly a triangle; their teeth are small, and exquisitely enamelled. The tending of cattle is their principal occupation in the colony; and for this purpose they hire themselves to the farmers. Some are employed as waggon-drivers, in which capacity they are very skilful, driving sometimes eight horses with perfect ease, over bad roads, avoiding every hole and rut, and going at a smart gallop. Their fidelity and honesty, when well treated, entitle them to rank with any Europeans. Their habits of life, however, are filthy and slovenly. Their villages, or kraals, form a confused mass of little conical huts, reared of twigs and earth, and so low that the inmates cannot stand upright. They carry on various little manufactures, such as tanning and dressing skins, form-

nation, equalling the Murutsi in industry, and far surpassing them in wealth and numbers. They are known to all the southern tribes, as the people from whom all other nations receive their iron and copper wares. All, indeed, of the South African tribes to the south of Inhamban habitually regard each other as members of the same family; they are, as they express it, one people, and, unless when war disturbs their harmony, mingle together without fear or mistrust. The industrious tribes of the interior are not insensible to gain; the mercantile character is fully developed among them; and they think of nothing, says Mr. Campbell, but beads and cattle. Their trade may be traced from Delagoa Bay on the eastern, to Whale-fish Bay on the western coast; and from Litakoo northwards to the Zambeze. The most southern tribe of the Betchuanas is the *Eatclapis*, whose chief town is *Litakoo* or *Lutakoo*, situate about 27° 6′ S. lat., 24° 40′ E. long., with a population variously estimated at from 4000 to 10,000. Its situation, however, has been several times changed within the present century; and *Kruman*, or *New Litakoo*, is the principal missionary station. Eastward from the Batclapis are the *Tammahas*, whose chief town is *Mashow*, 190 miles, or thereabouts, E.N.E. from Litakoo, and containing about 10,000 or 12,000 inhabitants. North-east of the Tammahas are the *Murutsi*, whose chief town is *Kurrichane*, about four times the size of Litakoo. West or north-west of the Murutsi are the *Wunkitsi*.

The *Zoolahs*, who live to the south-westward of Delagoa Bay, and round Port Natal, are a remarkably neat, intelligent, and industrious people, rich in cattle, cultivating a fine country, and inhabiting large towns. They were originally few in number; but have spread their conquests over a large territory, and now form a nation composed of all kinds of tribes. They are, generally speaking, of a more ferocious character than the southern Caffers, and also more powerful; but there is now a desert tract of 180 miles interposed between the Zoolahs and the Amapondas. Of late years, however, a great number of Dutch boors or farmers, discontented with the British government of the colony, have passed the frontiers to the north-east, and, after fighting their way through the intervening tribes, have established themselves, as an independent people, in the country of the Zoolahs, at Port Natal. Their chief town is *Pietermauritzburg*.

TERRITORIAL DIVISION OF THE CAPE COLONY. — The colonial territory is divided into two provinces, named the Western and the Eastern, the latter of which is under the charge of a lieutenant-governor. These provinces are subdivided into districts, as stated in the following Table:—

Provinces.	*Districts.*	*Area in sq. miles*	*White Population.*	*Black Population.*	*Total Population.*	*Chief Towns.*
Western.	Capetown, ...	5½	14,041	5,702	19,743	Capetown.
	Cape District,	3,584	8,270	4,910	13,180	Simon'stown.
	Stellenbosch,..	2,280	7,120	9,858	17,884	Stellenbosch.
	Worcester, ...	24,100	6,025	3,489	9,514	Worcester.
	Clanwilliam,..	18,011	7,000	1,015	8,015	Clanwilliam.
	Swellendam,..	9,000	13,345	3,314	21,859	Swellendam.
	Beaufort, ...	20,000	2,916	2,872	5,908	Beaufort.
	George, ...	4,545	3,676	4,517	9,193	Georgetown.
Eastern.	Colesberg, ...	—	2,100	—	2,100	Colesberg.
	Albany, ...	1,792	11,500	228	11,728	Bathurst.
	Somerset, ...	7,168	11,900	1,760	13,660	Somerset.
	Graffreynet,...	22,000	7,531	7,407	14,938	Graffreynet.
	Uitenhage,....	9,000	4,628	6,391	11,019	Uitenhage.
			100,053	51,463	158,741	

GOVERNMENT. — The affairs of the colony are administered by a Governor, who resides at Capetown, aided by an executive council, which is composed of the Commander of the Forces, the Chief-Justice, the Auditor-General, Treasurer, Accountant-General, and Secretary to Government. There is also a legislative council, appointed by the British Home Government. The eastern districts have been lately placed under the superintendence of a Commissioner-General, who resides at Uitenhage. Each district or drostdy has a civil commissioner, who acts also as a resident magistrate, and is aided by a number of unpaid justices of peace: a district is subdivided into a number of smaller divisions called veld-cornetcies, over each of which a veld-cornet, a sort of petty magistrate, presides. He receives no salary, but is exempt from all direct taxes.

When the Cape became a British colony the Dutch civil and criminal laws were in operation; but these, particularly the latter, have undergone considerable modification. The laws are administered by a supreme court, consisting of one Chief and two Puisne Justices; and for the better execution of the law, sheriffs and deputy-sheriffs of districts have been appointed since 1828.

RELIGION. — There is a variety of creeds among the Christian part of the population; the most numerous body being the Calvinists or adherents of the Dutch Reformed church. Missionary societies have also been long labouring in the attempt to convert the Hottentots and Caffers, and in some places have met with considerable success. The South African Missionary Society confines itself to Capetown; the London Missionary Society has stations at Capetown, the Paarl, Tulbagh, Bosjesveldt, Zuurbraak, Pacaltsdorp, Hankey, Uitenhage, Bethelsdorp, Port-Elizabeth, Theopolis, Grahamstown, Graffreynet, Kat river, Buffalo river, Cafferland, Philipolis, Bushman station on the Caledon river, Griquatown, Betchuana Mission, New Litakoo, Komaggas in Namaqualand, and Steinkoff. These stations employ 32 missionaries or pastors with several schoolmasters and assistant teachers. The Wesleyan missionaries are stationed at Capetown, Kamiesberg, and in Great Namaqualand, Grahamstown, Salem, Bathurst, and Port-Francis in Albany district, and among the Caffers and Betchuanas. The Moravians have stations at Gnadenthal, Groenenkloof, Enon, Hemelenarde, Elim, and Shiloh, which employ 39 missionaries.

STAPLE PRODUCTS.—Corn, wine, wool, provisions, oil, aloes, and fruits are the staples of this fine colony; but many other articles are either produced in the colony or obtained from the neighbouring nations. There is an annual exportation of corn to a considerable amount, which brings, as flour, a higher price at the Mauritius and other markets than the best American. Barley, oats, and Indian corn thrive well; the last is admirably adapted for fattening swine, the export of which, in the shape of hams, bacon, and salt pork, is yearly increasing. Two crops of potatoes are raised during the year, which are of a succulent yet mealy quality; and the nutritive property of every article of provision is abundantly exemplified in the fat and healthy appearance of the people. Wine has long been a staple export. The culture of the vine was introduced by the French Protestant refugees, and wherever the quality has been attended to, the wine produced is equal to that prepared in any other part of the world; but the vine growers have unfortunately been hitherto more attentive to the quantity than the quality of their wines, so that they are of very little repute in the European markets; and the reduction of duty on foreign wines imported into Britain since 1825, has almost ruined the Cape wine-trade. Constantia, near Capetown, was long celebrated for a peculiar and excellent wine. Wool will, in time, be one of

INTERNAL COMMUNICATIONS.—There are few roads; and the comm
country is almost entirely obstructed by the numerous mountain ranges, th
are tremendous. A comparatively easy access from Capetown is to be fou
of land between the western coast and the mountains of the Cape and St
the districts of Clanwilliam, Worcester, Beaufort, and Graffreynet, to say
in a manner shut out by the difficulties which the mountains present. To
rier between the Cape peninsula and the eastern districts, two works have
and completed to the incalculable advantage of the colony. The first is
through French Hoeck Pass; and the second, called Sir Lowry's Pass, was
Governor, Sir G. L. Cole, in 1830); farther east this road passes through
from which there is an excellent natural path as far as the village of Geor
town. The French Hoeck Pass leads to Worcester; but the roads beyond
could be improved only at an enormous expense. Every one who has re
other travellers of note, must have been appalled at the very description of
waggon by the old Hottentot Holland Kloof, and will feel pleasure in lear
passed at a brisk trot over as good a road as any in England. Indeed, bu
the communications throughout the country would be easy, for, with the
spots of inconsiderable extent, the surface of the ground presents a good
a crust of ironstone gravel, over which travelling may be performed at the
on horseback, from five to five and a half in a horse waggon, and three in
—(*On the Roads and Kloofs in the Cape Colony, by Major C. C. Mitchell*, Sec
R. Geog. Soc. Lond. VI. 168.)

RIVERS.—The GARIEP or GARIEP* (Great River) has its principal sour
the north-westward of Port Natal, and is formed by the union of two great
Gariep, and *Ky* (yellow) *Gariep*, which meet a little to the south of 29° S.
E. long. The Nu-Gariep has its origin at the head of a long valley, which is
Mountains and the Maritime Chain, 70 miles N. of Port Natal; and, after a
to the south-west, is joined by the *Caledon*, which rises on the opposite or n
mountains. The Ky-Gariep rises among the mountains, about 27° S. lat.,
E. long.; but its principal affluent, the *Donkin*, seems to have its sources nea
and the Caledon. From the point of confluence the united stream of the
entering the Atlantic Ocean, in lat. 28° 30' S. long. 16° 30' E. Its mouth is
be scarcely accessible for boats, and its course for several hundred miles is
falls and rapids; and, from Griqua town almost to the ocean, a distance of
ned on its northern bank by a parallel ridge of mountains. In 22° E. long.
between the mountains which approach on both sides, where the river forces
hills, arched over to a considerable extent by immense cliffs; and the roar
tinctly heard at the distance of many miles. Another magnificent fall occur
river is hurried over a rock 400 feet in height, its breadth, which above is iro
narrowed to a space of scarcely 100 feet. This was named *King George's Ca*
who discovered it in 1824. Besides the Caledon and the Donkin, the other p
Great Fish River, which drains the northern slopes of the Middle Roggevel
near 21° E. long.; the *Brak*; the *Zeekoe* or *Sea-cow river*; and the *Hart* or

The *Olifant's (Elephant's) River* flows in a northerly direction, along
mountains, and falls into the Atlantic in 31° 30' S. lat. It is the only river
navigable with boats for more than 30 miles from the sea, to which distance
The mouth is barred by a reef of rocks and a sandbank, which leave between
open, and through which whale-boats enter for water and provisions. The
falls into St. Helena Bay. The *Brede* river falls into St. Sebastian's Bay, w
wide at its mouth. The *Gauritz*, formed by two branches, the Big and the Li
Nieuveldt mountains, and flows into the Southern Ocean, between the distr
George. Its principal affluents are the *Buffel's* Buffalo), the *Four*, and the
formed by the union of the Kamanka and the Zuid (Sale), flows through Vilan

situate at the north end of Cape district, is a large semicircular bay, with good anchorage, and well sheltered from the south and east, but exposed to the north. Its mouth is 9 leagues wide, and the bay is 4 leagues deep, with regular soundings from 20 to 4 fathoms towards the southern shore. *Saldanha Bay*, one of the best and most commodious harbours in the world, is situate in 38° 8′ S. lat., 17° 55′ E. long. It extends about 25 miles from S.E. to N.W., with a comparatively narrow entrance, not quite 3 miles wide, which is forced through a ridge of hills, and on the north-west side, is divided into two channels, by either of which it may be safely entered. It affords at all seasons very excellent shelter and anchorage. *Table Bay* is situate at the north end of the Cape peninsula, and opens to the north-west. It affords secure shelter from September till May, and is the chief naval station at the Cape during that portion of the year. *Hout Bay* and *Chapman's Bay*, two small openings on the west side of the peninsula. *False Bay* is a large and nearly square gulf, about 30 miles deep and as many wide, opening to the south, and forming the south-east side of the Cape Peninsula, and south side of its isthmus. On its west side is *Simon's Bay*, the naval station during the winter months. *Mossel Bay* and *Plettenberg Bay*, are both in George district; the former is, next to Simon's Bay, one of the safest havens to the east of the Cape, and is capable of receiving vessels of every kind; the latter, 400 miles from the Cape, is equally safe, eligible, and commodious, affording safe anchorage in 8, 9, and 10 fathoms water, particularly during strong N.N.W. gales. The fine harbour of the *Knysna*, a little to the west of Plettenberg's Bay, would contain fifty large ships secure from all winds, but the entrance is narrow and intricate. *Algoa Bay* includes all the coast between Capes Recife and Padron or Padrao, and is the chief haven of the eastern districts, one of the winter harbours of the colony, and a free port. It opens widely to the south-east, but during winter (from 1st April to 1st September) the wind scarcely ever blows from that quarter; in some seasons, however, the surf rolls in with great violence. *Port Natal*, on the east coast of Cafferland, in 29° 55′ S. lat. and 31° 28′ E. long., is an exceedingly fine harbour, but the entrance is narrow, and contains a bar of shifting sand. There are, however, 6 feet water on the bar, with a run of 6 feet, and at spring tides 14 feet of water. *Delagoa*, or correctly, *Aluguoa Bay (Bahia da Alagoa)*, called also by the Portuguese *Bahia de Lorenço Marques*, and *Bahia Formosa*, is a large bay opening widely to the north-east, between 25° 34′ and 26° 22′ S. lat. The south-east side is formed by a long peninsula or jutland, terminated by the islands called the Great and Little Inyak.

Islands.—*Robben* or *Penguin Island*, at the mouth of Table Bay, 5 miles N. of Green Point, is six miles in circumference, with sunken rocks and breakers along its west and south sides. But there is no danger for more than two cables' length from the island, except from a sunken rock called the *Whale*, which is a mile to the southward. The island contains several springs of good water, and produces a few grapes and culinary vegetables. It is a great resort of penguins and quails during their breeding season, and a depot for convicts, who are employed in quarrying limestone and excellent blue flags streaked with white, which are used in Capetown. *Dassen* or *Coney Island*, 10 leagues N. and W. of Green Point, and 8 to the southward of the entrance of Saldanha Bay, is about 6 miles in circumference, with little elevation and a sandy surface. The shore is foul and dangerous on the south and west sides, but bold and clear of danger on the north and east, where good anchorage may be found close to the land. The passage between the island and the mainland is entirely free of danger two cables' length from either shore. Its only inhabitants are penguins and gannets. *Seal Island*, and *Noah's Ark*, are in False Bay. *St. Crux Isles*, *Bird Islands* or *Chaos*, and *Doddington Rock*, in Algoa Bay. The Chaos are rendered famous by their being the termination of the voyage of Diaz, in 1486, who got thus far eastward without seeing the Cape; the Doddington Rock, which lies 3 miles S. from the Chaos, is so named from the Doddington Indiaman having been wrecked upon it in the year 1755. *Inyack* lies on the east side, and *Shefeen* islands on the west side of the mouth of Delagoa Bay.

Capes.—The Cape of Good Hope is the south-western extremity of Africa, and is situate in 34° 23′ 40″ S. lat. and 18° 32′ 25″ E. long. It is formed by a peak 1000 feet high covered with piles of huge stones, loosely thrown together as if giants had been at play, and presents a perpendicular cliff to the ocean. *Cape L' Agulhas* (Needle Cape) is however the most southern point of the continent, projecting as far south as 34° 52′ S. lat, a little to the west of 20° E. long. *Green Point* is the western extremity of Table Bay, on which a lighthouse was erected in 1825, two miles N.W. from Capetown. *Cape Hanglip*, the south-east point of False Bay. *Cape Recife*, a long and low spit of rocks and sandhills, forms the south-western point of Algoa Bay. *Cape Vidal* in Cafferland, 28° 9′ S. lat. *Cape Veltas*, about six miles to the S. of the mouth of the Gariep, in 28° 27′ 30″ S. lat., 16° 17′ E. long, is a high bluff point, with rocks running about half a mile out to sea, beyond which there is no danger. Cape *Padron* or *Padrao*, at the east side of Algoa Bay, is so called from its having had a pillar erected upon it by Bartholomew Diaz in 1486. Cape *Inyack* or Cape St. Mary, the south-east point of Delagoa Bay.

Towns, &c.—Capetown (Kaapstad of the Dutch) is situate on the south side of Table Bay, at the foot of Table Mountain, on a plain which rises with an easy ascent. It is regularly built, with straight and parallel streets, crossing each other at right angles, and shaded with elm or oak trees. The houses are mostly of red-brick or stone, of a good size, and generally have a stoup or terrace before the door, shaded with trees, beneath which the inhabitants, British, as well as Dutch, delight to lounge, sheltered from the sun, or to inhale the fresh evening breeze. The squares are well laid out, the streets are extremely clean, and the public buildings numerous and substantial. Throughout the week there is a continual busy hum of industry; and on the Sabbath the sounds of the church bells, and the groups of well-dressed people flocking to their respective places of worship, readily make the traveller forget that he is at the southern extremity of Africa. The castle, on the south-east side of the town, is a strong fortification commanding the anchorage; and, if well defended, is capable of a successful resistance to any force which may be brought against it. It is pentagonal, with a broad ditch and regular outworks; and contains most of the public offices, and barracks for 1000 men. There are several other defensive works, and the anchorage is commanded by a battery called the Mouille. A plentiful supply of excellent water is brought to the town in pipes, and distributed to every part of it; ships' boats are supplied at the landing-place with a beverage equal to that of the Thames. The population exceeds 20,000, of whom more than half are white; and of these the majority are Dutch. An institution, called the South-African College, was founded at Capetown in 1829; its affairs are under the superintendence of a council and senate; and it has professors of mathematics, astronomy, classical, English, Dutch, and French literature, drawing, &c. There is also a South-African literary and scientific Institution, with a museum attached to it; a South-African public library; a Medical Society; a Royal Observatory, and several religious and benevolent societies.

The other towns of the colony are generally mere villages. The only large town is *Grahamstown*, in Albany, situate on the Kowie river, 650 miles east of Capetown, and 100 from Port-Elizabeth on Algoa Bay. It contains about 700 houses, about 3000 inhabitants, two public libraries, a printing office, and several excellent public buildings and institutions. *Port-Elizabeth*, in Uitenhage, on the coast of Algoa Bay, three miles north of Cape Recife, is rapidly rising in importance, and being a free port, bids fair to rival Capetown. *Uitenhage*, the capital of the district, is also a neat and flourishing town, built on a large and well-watered plain, 600 miles from Capetown. *Cradock*, in Sco

nearest district, on the direct road to the Cogha and Bethlehem committee, is that township, a
taine 300 inhabitants. *Graaf-Reynet* is situate on a sort of basin, almost enclosed by the deep ch
the Sunday river, closely environed by an amphitheatre of steep rugged hills, and contains ab
houses, almost all neat and commodious brick buildings, with wide straight streets, which are
with rows of lemon and orange trees. Population between 2000 and 3000. *Port-Beaufort*, at the
of Breede river, in Swellendam district, enjoys a considerable coasting trade. *Georgetown*, in
district, is pleasantly situate on a large plain, seven miles from the sea, is divided into several
with handsome houses, and is rapidly improving. *Bathurst*, in Albany, occupies an elevated s
miles inland from Port-Francis, and was intended for the capital of the district.

HISTORICAL EVENTS.—The Cape of Good Hope was discovered in 1486 by Bartholomew Di
1650 two commanders of the English East India Company took possession of the country
name of King James; but no settlement was then formed. In 1650 it was colonized by the
Government, and remained in their possession for 195 years. In 1795 it was taken possess
by a British armament, but restored to the Dutch in 1802. In 1806 it was again taken by the
and confirmed to them at the general peace in 1814.

THE ISLANDS OF AFRICA.

MADAGASCAR, in the Indian Ocean, about 240 miles from the coast of Mozambique, between 12° and 26° S. lat., and 44° and 52° E. long., is 930 miles in length, by from 70 to 330 in breadth, and contains an area of about 235,000 square miles. The population has been estimated at 4,700,000. Along the east coast extends a margin of low land from 20 to 30 miles in breadth, and along the west coast a similar margin, from 70 to 100 miles broad, and between them is an elevated country, consisting of extensive plateaux, running north and south, diversified with hills, luxuriant valleys, passes, and ravines, craters of extinct volcanoes, forests, savannahs, rivers, and lakes, while almost every part of the coast, particularly the western, is indented with spacious harbours and bays, some of which are 50 miles deep, with soundings in every part, and sheltered from every wind. Though the island is not traversed by any continuous chain, yet many parts may be called mountainous; the highest point, *Ankaratra*, lat. 19° 40′ S. long., 47° 20′ E, is about 11,000 feet above the level of the sea. The most fertile portions are the valleys, most of which produce rice and other vegetables, or are clothed with a rich and luxuriant verdure. The climate is extremely diversified: that of the coast is oppressively hot, while in the interior the temperature seldom exceeds 85°. The heat at Tananarivo, the capital, ranges from 40° to 85°; the middle of the day is often extremely sultry, but the mornings and evenings are always pleasant. The climate of the coasts is very prejudicial to Europeans, but in the central regions, it is much less so. The weather on the coast is usually hot, damp, and rainy; but in the interior, the rains are periodical. The trade winds from the east and south-east prevail during the greater part of the year; while the rains are often accompanied by violent gales from the north-west, west, and south-west. Earthquakes are sometimes felt. The soil in many parts is prolific, and highly susceptible of improvement; and the island produces many valuable plants, including both those of tropical and those of temperate climates. Among the animals may be mentioned five varieties of the monkey, foxes, wild dogs and cats, hogs, goats, cattle and sheep similar to those of South Africa, crocodiles, serpents, some of which are of large size, lizards, scorpions, and centipedes, parroquets, flamingoes, falcons, kites, turtle-doves, pigeons, turkeys, and particularly bats of large size. The sea abounds with fish, and oysters are plentiful on the coast. The people are all comprised in one empire, form one nation, and speak various dialects of the same language: but they appear, nevertheless, to be descended from different original stocks. The distinction of colour separates them into two great classes, one of which are olive coloured, have handsome features, graceful persons, and lank dark hair, while the other and more numerous class closely resemble the Papuans, being short and stout, almost black, with low foreheads, broad flat faces, large eyes and mouth, and long crisped hair. With the exception of the Ovahs, who belong to the first class, and live in the interior, the Madegasses are little better than barbarians, go almost naked, despise a settled life, are extremely superstitious, and practise most of the vices so generally prevalent among the savages of the adjacent continent. Their diet consists principally of rice and manioc, with beef and poultry, and their cookery is extremely simple. Madagascar is divided into 28 provinces, each having a separate chief; but latterly the Ovahs have become the prevailing tribe, and their chief, who is in fact sovereign of the island, receives tribute from all the rest. The government is despotic, and the succession usually hereditary, though the king has the right of appointing his immediate successor, and of settling the line through future generations. The royal family are highly honoured, and no people can be more tenacious of etiquette than his subjects, and of the respect due to rank. The sovereign is also high priest of the national religion, which is a rude species of polytheistic idolatry. Christianity was introduced with some success by English missionaries between 1818 and 1830; but a royal edict, in 1835, not only forbade the profession of it, but legalised the persecution of all its adherents. Within the present century the whole island was reduced to subjection by Radama, chief of the Ovahs, who proved himself to be a wise and enlightened prince, anxious for the improvement of his country, and the civilization of his subjects; but since his death, and the succession of his queen to the sovereignty, there has been a stagnation in the trade with England, the missionaries have been driven from the island, and every means adopted to destroy the effects of their past exertions in the promotion of religion and social improvement. The capital is *Tananarivo*, situate on a lofty table-land, nearly in the centre of the island. *Tamatave* on the east coast, is also a place of considerable importance. The capes of the island are *St. Mary*, the most southerly point, and *Cape Ambro*, the most northerly; *Cape East*, on the north-east coast; *St. Sebastian* and *Manambaho* or *St. Andrew* on the north-west. The principal bays are those of *Antongil*, north-east, and *St. Augustine*, south-west.—(*Ellis's History*. Lond. 1837.)

The Comoro Islands are four in number, situate midway in the channel between Cape Delgado on the continent, and the most northerly part of Madagascar. They are high and mountainous in the interior, but the lower grounds abound in sheep, cattle, and all kinds of tropical grains and fruits. The people are mild and industrious. *Comoro*, the largest, is 90 miles in circumference, and contains about 30,000 inhabitants, who speak Arabic, and profess Islam. It contains a mountain peak, supposed to rise 6000 or 7000 feet above the level of the sea. *Anjouan* or *Johanna* is the most flourishing. The other two, *Mohilla* and *Mayotta*, are comparatively small.

BOURBON, 440 miles E. of Madagscar, between 20° 50′ and 21° 24′ S. lat., is 40 miles in length, by 27 in breadth, of an oval form, and contains about 900 square miles. It is divided into two parts by a chain of mountains, running north and south, and connecting two volcanic groups, or centres of volcanic action; the one of which, in the north, the *Piton des Neiges*, rises 10,355 feet above the level of the sea; the other, in the south, the *Piton de Fournaise*, is an active volcano of 7218 feet in height. There are no plains of any extent; the shores are not high, but there are no safe roads, nor any harbours. The climate is healthy and agreeable, especially on the eastern or windward coast. The atmosphere is pure, and the sky generally clear, though this tranquillity is sometimes disturbed by violent hurricanes. From December till May is the hot and rainy season, when the mean temperature is 80°; during the rest of the year the mean temperature is 76°. The soil is very fertile, particularly near the shore, where the cultivated land forms a belt round the island, ascending the mountain slopes in some places to the height of more than 3000 feet. The sugar-cane is extensively grown, about a fourth part of the cultivated land being so occupied; coffee also in small quantity, cloves, cacao, and tobacco. Wheat, rice, and maize are raised, but to the extent of less than a fourth part of the quantity required; potatoes, beans, and other leguminous plants, and a great variety of fruits succeed remarkably well; and manioc forms the staple food of the blacks. In 1837, there were on the island 32,240 swine, 6500 deer and goats, 5350 horses, and about 15,000 mules, sheep, and oxen, in nearly equal numbers. The coasts abound with fish, large turtles, coral, and ambergris. The population, in 1836, consisted of 36,803 free colonists, and 69,296 slaves, of whom 57,346 were employed in agriculture. The free colonists are of French extraction; the slaves are African, mostly from Madagascar; the latter are in general humanely and kindly treated. Bourbon contains a college and numerous schools, 16 churches, 2

hospitals, 2 poor's houses, and 2 prisons. Four newspapers are published in the island. *St. Denis*, the chief town, contains a public library, and about 12,000 inhabitants. *St. Paul*, the second town, contains 10,000 inhabitants; but neither of them possesses a harbour, and vessels have to lye in open and exposed roadsteads. Bourbon was discovered in 1545 by Mascareenhas, a Portuguese navigator, whose name it bore till the French took possession of it in the next century, and gave it its present name. It has a governor sent from France; and is one of the principal colonial possessions of that country.

MAURITIUS, or the ISLE OF FRANCE, situate in the Indian Ocean, 80 miles E.N.E. of Bourbon, between 20° and 21° S. lat., is of an elliptical form, 44 miles N.S., 32 E.W., and contains 423,680 acres or 676 square miles. It seems to be of volcanic origin; the rocks are disposed in strata, which rise from the sea, and form, in the centre of the island, a high plain. The mountains form three principal ridges, from 1800 to 2800 feet above the level of the sea; and their summits are in general pointed like cockscombs. A coral bank surrounds the island, at the distance of a quarter or a league from the shore and the islets on the coast are all of coral formation; but there is no trace of a crater. The soil is in many parts exceedingly rich; in some places it consists of a black vegetable mould, in others of a bed of solid clay or quaking earth, into which a stake of ten feet may be thrust without resistance. The climate is salubrious. Owing to the purity of the atmosphere the sky is of intense blue; and the mountains stand out in bold relief. The richest and rarest plants of the East have been naturalized, and most of the plants, trees, and vegetables of Europe have also been introduced. The principal branch of cultivation is the sugar-cane, and sugar forms about seven-ninths of the value of the exports of the island, the total amount of which in 1836 was £903,568. The white population are mostly of French extraction, and amounted in 1836 to 20,411; the blacks, in the same year, amounted to 53,791. The white and the coloured or mixed races are distinguished for their high spirit, talent, energy, and industry. The British residents are few in number, and chiefly merchants, soldiers, or government servants. The island was discovered in 1505 by the Dutch, who gave it its present name in honour of their stadtholder, Maurice Prince of Orange; it was subsequently taken possession of by the French, and raised to a naval station of the first importance. It was named the Isle of France, and became the capital of their possessions in the Indian Seas. Having become, during the war of the revolution, a resort of privateers, who infested the Indian Ocean, and committed great depredations on the British trade, it was attacked and captured in 1810 by a force from India; and at the subsequent peace in 1814, the island was confirmed to Britain. The capital is *Port Louis*, a very neat town, with 26,000 inhabitants, has well supplied markets, and excellent water. The only harbours are that of Port Louis on the west coast, and *Malebourg* or *Grand Port*, on the S.E. Dependent on the government of Mauritius are the small islands of *Rodriguez*, *Seychelles*, *Diego Garcia*, and others. Rodriguez, 300 miles E. of Mauritius, is 26 miles long and 12 broad, mountainous, and inhabited by a few French colonists. On the north side is a bay, with excellent anchorage, secure shelter for ships of all sizes, and abundance of wood and water. The air is delightful, the water pure, and the vegetation luxuriant. The *Seychelles* or *Mahe Islands*, between 4° and 5° S. lat., and 54° and 57° E. long., consist of *Mahe*, containing 30,000 acres; *Praslin*, 8000; *Silhouette*, 5700; *La Digue*, 2000; *Curieuse*, 1000; *St. Anne*, 800; *Cerf*, 400; *Frigate*, 300; *Mariane*, 260; *Conception*, 130; *Felicité*, 300; *N. Island*, 800; *Denis*, 200; *Vache*, 200; *Aride*, 150; total, 50,120 acres; besides more than fifteen others of a smaller size, all resting on a coral bank, which surrounds them to a great extent; but all the islands are themselves composed of granite. They possess many excellent harbours, and never being visited by tornadoes, their neighbourhood is much frequented by whalers. The vegetation is extremely luxuriant, and the inhabitants carry on a lucrative trade in numerous small vessels, with India, Mauritius, and Bourbon. The most extraordinary vegetable production is the Coco de mer, a kind of palm, which grows only on Praslin and Curieuse, and has refused to grow, after repeated trials, on any of the others. The islands are very healthy. The *Seychelles* and the *Amirante Islands*, a low and insignificant group to the S.W., at the distance of 80 miles, are under the charge of an agent from the Mauritius, with 25 soldiers.

SOCOTRA, a large island, east of Cape Guardafui, at the entrance of the Gulf of Aden, is 70 miles in length, and 19 in breadth, and may be described as a pile of mountains, surrounded by a low plain. The soil is hard and not susceptible of much cultivation, and the south-west side of the island is as arid and barren as the worst parts of Arabia. The climate is cool and temperate; the island has been famous from the earliest period for the production of the *aloe spicata*, which appears to thrive only in parched and otherwise barren places. The hills on the west side are thickly covered with the plant to the extent of miles, but very little attention is paid to the cultivation and preparation of the aloe for exportation. Next in importance is dragon's blood, which is collected at all seasons; there are also tamarinds, figs, dates, and other fruits; but agriculture is almost unknown, the only grain cultivated being a kind of millet, which requires little attention. The inhabitants depend principally on their date-trees and their flocks. The only animals seen by the British settlers were camels, sheep, goats, asses, beeves, and civet cats. Socotra is inhabited by two distinct races of people; the one called Bedwins, inhabit the mountains, and the high western parts of the island; the other, who call themselves Arabs, are a mongrel race, the descendants of Arabs, Africans, Portuguese, and others. But they all wear the same dress, and have adopted the same language and customs. They are all Mahometans; and there is not throughout the island a single constituted authority. But though without chiefs or laws, good order is pretty well preserved.—(*Memoir on the Island of Socotra, by Lieut. Wellsted, Journal R. Geog. Soc. Lond.* V.)

THE CAPE VERDE ISLANDS are a numerous group in the Atlantic Ocean off the west coast of Africa, about 80 miles from Cape Verde, between 14° and 18° N. lat., and 22° and 26° west long. The principal are *Santiago*, *Mayo*, *Fogo*, *Brava*, *Boavista*, *Sal*, *Santo Nicolao*, *Raza*, *Branca*, *Santa Luzia*, *Santo Vicente*, and *Sant' Antonio*. They are all of volcanic origin, and Fogo still emits much smoke from a crater 7884 feet above the level of the sea. In general the surface of them all is rugged, rocky, arid, and unproductive. The chief article of produce is cotton; there is also a very fine breed of asses and mules, many of which are sent to the West Indies. Goats, poultry, and turtle abound. Salt is formed in large quantities by natural evaporation, particularly in Mayo. The islands belong to the Crown of Portugal, and their governor-general resides at *Porto Praya*, in Santiago. *Tarrafal* or *Terafal Bay*, at the south-west part of Sant' Antonio, is the most convenient watering-place connected with the islands.

FERNANDO-PO, PRINCIPE, SAN THOME, and ANNOBON, are situate in the Gulf of Guinea, directly south of the delta of the Kawara. *Fernando-Po* was discovered by a Portuguese of that name in 1471; it is of an oblong form, 120 miles in circumference, and very mountainous; Clarence Peak, near the northern extremity, rises to 10,655 feet. The mountains and valleys are covered with dense forests of large and valuable timber; but the climate is so unhealthy that it has been abandoned by the British settlement recently formed upon it. It is, nevertheless, still inhabited by a lawless race composed of slaves or malefactors from the neighbouring coast, which is only 20 miles distant. *Principe* or *Prince's Island*, 9½ miles long by 6 broad, is high and wooded. *St. Thomas* is large and fertile; but one half of the island is mountainous, and towards its southern extremity it presents a mass of steep elevations, with abrupt craggy faces, and several pinnacles rising like gigantic ninepins. St. Thomas lies immediately under the equator. *Annobon* is a pretty little island, inhabited by a simple native race; is about 4 miles long, by 2 broad, and rises to an elevation of 3000 feet. The last three islands are nominally subject to the Crown of Portugal.

ST. HELENA is situate in the Atlantic, 1200 miles from the nearest coast of Africa, in S. lat. 15° 15′, and W. long. 5° 49′. It presents to the sea, throughout its circumference of 28 miles, a perpendicular wall of rock from 600 to 1200 feet high. On the summit is a fertile plain, interspersed with conical eminences and fertile valleys. The climate is agreeable and temperate, though moist. There are only four places of access from the sea; and at the largest of these is *Jamestown*, the capital, on the north-west or leeward side of the island. Besides the indigenous plants, coffee, banyans, bamboos, aloes, apples, peaches, mulberries, have been introduced, and are found to thrive. Indeed nearly all the various kinds of tropical and European fruits ripen, more particularly in the sheltered valleys. Vines, oranges, citrons, lemons, figs, pomegranates, mulberries, tamarinds, mangoes, cocoa-nuts, sugar-cane, and pine-apples, thrive well; apples have succeeded tolerably; but the climate seems not congenial to cherries, currants, and gooseberries. Corn and pulse are little cultivated; nor is the climate suitable for them, on account of droughts. Population about 5000. The island was discovered on St. Helena's day (21st May), 1502, by Juan de Nova Castella, the Portuguese admiral, on his return from India; it was long in possession of the English East-India Company, but has now been transferred to the Crown. It has acquired great celebrity from being the place of confinement selected for Napoleon Buonaparte, who lived in it from 1815 to 1820, and was buried in one of its valleys till 1840, when his remains were transferred to Paris.

ASCENSION is a small island of volcanic origin, and of the most arid aspect, in the Atlantic Ocean, in 7° 57′ S. lat., 14° 28′ W. long. It has been recently garrisoned by a small body of British troops, and fortified at every accessible point, to serve as a place of refreshment for vessels employed on the coast of Africa. The shores abound with large turtles; and numbers of these animals are now kept in ponds, from which they can be purchased at 50s. a piece, weighing from 200 to 800 lbs.

The ISLANDS OF TRISTAN DA CUNHA, a small group, in 37° S. lat., 13° W. long., are three in number, rising like hills abruptly from the water to a great elevation. The principal island rises at an angle of about 45° to the height of 3000 feet, above which rises a dome-shaped summit to the height of 6400 feet, bearing the crater of an extinct volcano. The others are named *Inaccessible* and *Nightingale Islands*. They were discovered in 1506 by Tristao da Cunha, a Portuguese, whose name they bear, but remained uninhabited till the present century, when some British or Americans squatted upon them, and make a livelihood by cultivating the soil, and furnishing supplies to the few ships which visit them.

Bissagos or *Bijougas*, a group of small volcanic islands, off the mouth of the Rio-Grande, on the coast of Senegambia, between 10° and 12° N. lat. The inhabitants are said to be brave, but treacherous; they raise some maize, but are chiefly dependent on their cattle, goats, and fishing.

Sherboro, a large island on the coast south of Sierra Leone; off its most westerly point are the *Turtle Islands*.

CANARY ISLANDS.—See page 551.

MADEIRA, PORTO SANTO, and DESERTAS.—See page 556.

ASTRONOMICAL POSITION.—Between 35° and 170° W. longitud
56° S. latitude.

DIMENSIONS. — The greatest length from Point Beechey, on the
curve line, drawn along the Rocky Mountains and the Cordilleras
Cape Horn, is about 10,875 miles; the greatest breadth of North A
fifty-first parallel, is about 3250 miles; and of South America
Roque in Brazil, to Cape Blanco, in Peru, 3200 miles. The nar
the continent, is the Isthmus of Darien or Panama, which connects
America, between the Caribbean Sea and the Gulf of Panama in
the breadth of which, at one place, opposite Mandingo Bay, is lit
miles. The continent is divided by this isthmus into two large
very unequal dimensions, but very different in form: North Amer
7,400,000 square miles; South America, about 6,500,000; and the
other islands along the coasts about 150,000; or, altogether, the c
14,050,000 square miles. In these dimensions we have not includ
the Arctic Islands; of which we shall give a separate account.

BOUNDARIES.—*Northern*:—the Arctic Polar Ocean. *Eastern* an
—the Atlantic Ocean. *Western* and *South-Western*:—the Pacifi
America terminates with a point in the Southern or Antarctic Oce

GENERAL ASPECT.—According to the geographical system ad
world, America ought to be considered as two distinct continents,
isthmus of Darien. Between these there is a striking resemblance
in the north, and gradually contract as they advance towards the so
the one in a narrow isthmus, the other in a narrow promontory.
chain of mountains near its western coast, abounding in volcanoes,
on the opposite side, destitute of any trace of volcanic agency; and
central plain which declines to the south and the north, and is wate
tic streams. In their climate, however, and in their vegetation and an
the two regions are very dissimilar. South America is a peninsul
form; its greatest length from north to south is 4550 miles, and its
from east to west is 3200; its superficial area contains about 6,500,00
which about three-fourths lie between the tropics, and the remainde
temperate zone. From the configuration of its surface this peninsul
into five distinct physical regions: — 1. The low country skirting
Pacific Ocean, from 50 to 150 miles in breadth, and 4000 in length,
extremities are fertile, and the middle portion is a sandy desert. 2.

and afford shelter to a few wild animals of other species. 5. The high country of Brazil, eastward of the Parana and the Araguay, which presents alternate ridges and valleys, thickly covered with wood on the side next the Atlantic, and opening into pasture lands in the interior.

North America may also be divided into five regions:—1. The narrow region which separates the Gulf of Mexico and the Caribbean Sea from the Pacific Ocean, traversed throughout its whole length of 2500 miles by ranges of mountains, which leave a narrow tract of low land along the sea-coasts, while in certain portions of the interior, they form elevated table-lands. 2. The maritime region, between the Pacific Ocean on the west, and the ridge of mountains which extends from Cape St. Lucas in California, northwards to Alashka. 3. The elevated region, which forms a sort of table-land between the Maritime chain above mentioned on the west, and the Rocky Mountains on the east. In its southern portion it presents the arid salt plains of the Californian desert; between 40° and 45° N. lat., it comprises a fertile region, with a mild and humid atmosphere; but, beyond the last mentioned parallel, it is barren and inhospitable. 4. The great central valley of the Missouri and Mississippi, extending from the Rocky Mountains on the west, to the Alleghany or Appalachian mountains on the east, and from the Gulf of Mexico northwards to the 45° or 50° N. lat. Between these parallels runs in a waving line the watershed which divides the basins of the St. Lawrence and the Mississippi, from those of the streams that flow to Hudson's Bay and the Arctic Ocean. On the east side this region is rich and well wooded; in the middle, it is bare, but not unfertile; towards the west, it is dry, sandy, and almost a desert. 5. The eastern declivities of the Alleghany mountains, and the maritime region, extending to the shores of the Atlantic. This is a region of natural forests, and of mixed but rather poor soil. 6. The great northern plain beyond the 50th parallel, four-fifths of which are a bleak and desolate waste, overspread with innumerable lakes, and resembling Siberia in the physical character of its surface and the rigour of its climate.

MOUNTAINS.—The CORDILLERAS DE LOS ANDES skirt the shores of the Pacific Ocean like a vast rampart, along the western coast of South America, from the 12° of N. to the 53° of S. lat., where they reach the Strait of Magellan. Beyond this, the chain is continued along the western and southern coasts of Tierra del Fuego, where it may be said to terminate at the Strait of Le Maire or Staten Island. The Andes derive their name from *anti*, a Peruvian word, signifying copper. Though often described as a single chain, they generally consist of a succession of ridges, separated by high and narrow valleys; but, instead of running in parallel lines, these ridges generally ramify from central points in all directions, and thus present the appearance of a confused assemblage of small chains. Between lat. 33° and 6° S. they spread out to a breadth of 300 miles, and even much farther, if we include the subordinate chains. In the intervals between the ridges are situate many lakes. From 6° S. to 2° N. the Andes contract their breadth, and form an elevated plateau; one part of which constitutes the *paramo* or desert of Assuay, a plain at the height of 13,000 feet above the level of the sea, and presenting a surface of 50 English square miles, where snow storms are frequent, and only a few alpine plants grow. Farther north is another range of table-land, from 9000 to 9400 feet in height, near the northern extremity of which is the city of Quito. On this elevated plain are two lines of lofty summits, which stand detached, and are covered with perpetual snow, bearing the celebrated names of *Chimborazo, Antisana, Pichincha*, &c. From Quito, a single chain extends to Popayan, where it divides into three branches. The western branch, which scarcely reaches an elevation of 5000 feet, separates the valley of the river Cauca from the Pacific Ocean; while a branch proceeding from it passes onward to the isthmus of Panama, where it terminates. The second, or central branch, maintains nearly the general elevation of the main trunk, and has summits which rise into the regions of perpetual snow. It separates the valley of the Cauca from that of the Magdalena. The third, or eastern branch, separates the valley of the Magdalena from the plains of the Rio Meta, and has its northern termination at Cape Vela, in 72° W. long. This, though lower than the central chain, contains summits which reach an elevation of 14,000 feet. Between the central and eastern ranges is situate the plain of Bogota, which is about 8700 feet above the level of the sea; from the perfect level of its surface, and the barrier of rocks that enclose it, this plain appears to have been anciently a lake. The waters of the plain escape by a narrow outlet, and rushing down a cleft, leap at two bounds to a depth of 573 feet, forming the celebrated fall of *Tequendama*, which, in respect of beauty and sublimity, is said not to be surpassed in the world. The mean height of the Andes in Peru, or that of the continuous ridge, independent of projecting cones, is estimated by Humboldt at 11,000 or 12,000 feet; in Chili, according to Mr. Miers, the highest summits, in 33° S. lat., only reach the height of 15,000 feet, while the mean height of the chain is in some places so low as 8000; in Patagonia the elevation is still less, and may be estimated at about 5000 or 6000; none of the summits, so far as is known, exceed 9000. Till lately, the loftiest summits were supposed to be those in Quito; but Mr. Pentland has ascertained that these are greatly surpassed by the mountains of Upper Peru, where the Andes form two cordilleras, or chains, separated by a large table-land, part of which is occupied by the lake Titicaca. The eastern cordillera presents, between 14° and 17° S. lat., a range of snow-capt peaks exceeding 20,000 feet in elevation; and among these are particularly distinguished the *Nevado de Sorata*, 15° 30′ S. and the *Nevado d' Illimani*, a little farther south. The western chain is lower than the eastern, but one of its summits reaches 18,800 feet. The mineral wealth of the region has attracted a large population to this table-land, which, with the exception of Thibet, is probably the highest inhabited country in the world. It was the primitive seat of the empire of the Incas, and the centre of Peruvian civilization. In Quito and Upper Peru, the back or crest of the ridge is free from snow, which only rests on isolated summits; and the means of passing from the one side to the other might perhaps be found wherever it is deemed necessary. In Chili, beyond the latitude of 30° S., the highest point of the most frequented pass was found by Mr. Miers to be 11,920 feet above the level of the sea; and the courier travels it even in winter. In Peru and Quito many of the passes consist of deep clefts, called *quebradas* (breaks), apparently produced by earthquakes, which are extremely narrow, and sometimes a mile deep. In Patagonia, where the snow line is much lower, the passes must be few; but there are some; and this circumstance would of itself authorise the conclu-

sion, that the general elevation of the chain is lower in that country than in Chili. But snowy mountains, and even glaciers, are said to be frequent.

Three branches or transverse chains proceed from the Andes, nearly at right angles, and cross eastward across the continent, about 18° S. and 4° and 9° N. lat. The most northerly of these is the "Cordillera of the Coast," which leaves the main trunk near the southern extremity of the lake of Maracaybo, reaches the sea at Puerto Cabello, and then proceeds eastward through Caracas to the Gulf of Paria, a distance altogether of about 700 miles, with a mean elevation of [illegible]. One of its summits, however, the *Silla de Caracas*, has an elevation of 8400 feet; and its western part, at some distance from the sea, contains the Sierra de Merida, whose elevation is [illegible]. The second transverse chain leaves the main trunk between 3° and 4° N. lat., and, passing eastward, terminates in French Guiana, not far from the mouth of the river Amazon. It is sometimes called the Cordillera of Parimé, but is named by Humboldt the "Cordillera of the cataracts of the Orinoco," because that river, which flows among its ridges in the upper part of its course, forms the falls of Maypure at the point where it descends into the low country. The mean elevation of the chain is estimated at 4000 feet; but only a small part of it has been visited by any European. It separates the basins of the Orinoco and the rivers of Guiana from that of the Amazon, and is covered with magnificent forests. Its breadth is supposed to be from 200 to 300 miles, and its length, about 600 miles. The third transverse chain, which bears various names, and is little known, crosses the continent between 12° and 18° S. lat., connecting the Andes with the mountains of Brazil, and separating the basin of the Amazon from that of the Plata. It is a broad and elevated plateau rather than a distinct cordillera, and consists of low hills or uneven plains, with very little wood, presenting in some places extensive pastures, and, in others, tracts of a poor sandy soil. Its average elevation probably does not exceed 2000 or 3000 feet above the level of the sea.

The *Mountains of Brazil*, which are of moderate height, and occupy a great extent of country, form an irregular plateau, bristled with sharp ridges and peaks. They extend from the shores of the Plata to within a short distance of the Amazon, over a space of 2000 miles, with a breadth of about 100. *Itacolumi*, about 250 miles N. W. of Rio Janeiro, which is celebrated for its auriferous sand and gravel, and contains the sources of three great rivers, the Parana, the San Francisco, and the Tocantin, is considered the most elevated summit, and the nucleus of the whole group. The western ridges of the group, which are near the middle of the continent, are supposed to be lower than those on the coast; but they are probably as high, if Dr. Spix be correct in stating that the mean temperature of the year is below 65°.

TABLE OF THE CULMINATING POINTS OF THE ANDES.

Principal Chain,—		Feet.
Andes of Patagonia,— . .	*Corcovado*, on the west coast,	7,980
	Yanteles,	7,620
„ Chili,—	*Aconcagua*,	23,910
	Descabezado,	21,360
	Volcano of Maypo,	19,260
„ Peru,—	*Chipicani*, near Arica,	19,088
	Picho-Picho, near Arequipa,	18,630
	Volcano of Arequipa or *Guagua-Pitihua*,	19,320
	Nevado de Chuquibamba,	21,060
	Nevado de Sanguanca, north-east of Lima,	17,904
	Chimborazo,	21,440
	Illiniza,	17,286
	Volcano of Pichincha, near Quito,	15,926
	Cotocache,	16,446
	Volcano of Cotopaxi,	18,890
	Volcano of Antisana,	19,130
	Cayambe, Urcu,	19,646
	Nevado de Sorata,	23,490
	Nevado d' Illimani, first peak, 16° 40' south,	24,420
	„ second peak,	24,200
	Volcano of Gualatieri,	22,000
	Cerro de Potosi,	16,027
„ Colombia,— . .	*Peak of Tolima*,	18,326
	Sierra de Merida,	16,420
	Nevado de Mucuchies, near Merida,	15,986
	Silla de Caracas,	8,632
„ Tierra del Fuego,—	*Mount Sarmiento*,	7,000
	Mount Darwin,	6,600
	Cape Horn,	1,870
„ Brazil,—	Summit of the chain of Mantiqueira,	8,421
	Itacolumi, Sierra do Espinhaço,	5,710
	Sierra de Piedada, near Sabara,	5,818
	Sierra de Frio, near Villa-do-Principe,	5,850
	Sierra d' Arasoiaba, south-west of San-Paulo,	4,092
	Sierra Tingua, north of Rio Janeiro,	3,549

The *Mountains of North America* form several distinct ridges, the principal of which stretch in the direction of north and south. It has been generally supposed that the isthmus of Panama is traversed by a mountain range connecting the Andes of South America with the mountains of Mexico; but this is not the case. At the eastern extremity of the isthmus, between the mouth of the Rio Atrato and the bay of San Miguel a level plain extends from the one sea to the other, apparently not more yards above the level of either. Here then the mountains of North America commence, but throughout the isthmus they are of small elevation, and the highest point of the road which crosses the ridges, between Panama and the mouth of the river Chagres, has been found to be only 633 feet above the level of the Pacific Ocean. From that point to the table-land of La Puebla, 1400 miles W., no certain information has been obtained respecting the mountains. The most considerable elevations are on the south-west side, and there are no less than 22 volcanoes within that space. From Puebla to Durango the Mexican mountains spread out to form a table-land or elevated plain, from 6000 to 9000 feet above the level of the sea, and from 100 to 300 miles in breadth. Across this plain, in 19° N. lat. are five volcanoes in a line east and west. Two of these, on the eastern side of the continent, with a group of four or five other cones, between Xalapa and Cordoba, have an elevation of more than 17,000 feet, and are the only mountains in Mexico that exceed the line of perpetual snow, which is here about 15,000 feet above the level of the sea. *Jorullo*, the lowest of the five volcanoes, rose suddenly from the midst of a plain, in September 1759. It is 1600 feet above its base, and is surrounded by a number of smaller cones or burning masses, within a compass of four square miles, which have been heaved up in the form of a dome. Near the tropic the Mexican cordillera divides into three branches, one of which runs parallel to the eastern coast, at the distance of 30 or 40 leagues, and terminates in Rio

another proceeds in a north-westerly direction and sinks gradually as it approaches the Gulf ifornia, in the province of Sonora; the third or central chain passes through Durango and New o, separates the sources of the Rio Gila from those of the Rio Bravo, and forms the eastern ridge n trunk of the Rocky Mountains. These, however, are divided from the Mexican chain by a plain, which crosses the country about the 32° N. lat. from California to the Rio Bravo, rising elevation of 4000 feet. From this point the *Rocky Mountains* extend northwards, gradually be- g lower, till at la t their elevation hardly exceeds 2000 feet. They also divide in their northern n into 14 or 15 ridges, separated by narrow valleys, which altogether occupy a breadth of about les, and skirt the Icy Sea at a short distance. From the southern point of California, a lower skirts the coast, as far as the volcano of *Mount St. Elias*, 60° N. lat.; and between this chain and ocky Mountains several intermediate ridges occur, the whole forming apparently an elevated a from 200 to 800 miles in breadth. Many of the summits of the Rocky mountains rise above ow line, and their elevation, where they were crossed by Lewis and Clarke, and also farther has been estimated at 10,000 or 12,000 feet. A shorter route from the valley of the Mississippi west coast has since been found, in the direction of the river Platte, 41° N. lat., where an open- the chain presents a passage so easy of access that a waggon drawn by horses might travel h it.

Alleghany or *Appalachian* Mountains, which form the eastern border of the great central consist of three, four, and, in some places, five parallel chains, extending from south-west to east, from Alabama to New Brunswick, a distance of 1100 miles, with a breadth varying from 150, and a mean elevation of 2000 or 3000 feet. They are almost every where clothed with forests, terspersed with delightful valleys. They present their steepest side to the east, and the transi- om their base to the maritime plain, which skirts the Atlantic, is very distinctly marked by a ledge over which the rivers fall, and to the foot of which, in the northern section, the tide ates. Trenton, Philadelphia, Wilmington, Baltimore, Georgetown, Fredericksburg, Richmond, field on the Neuse, Averysboro on Cape Fear river, Columbia, Augusta, Milledgeville, and Co- a, stand on or near the edge of this ledge, which from the last-named place recedes to the north- hrough Alabama and Mississippi till the Atlantic plain merges into the Mississippi valley. Be- the Alleghanies and the Rocky Mountains the *Ozark Mountains* extend along the middle of the valley of the Mississippi in a northerly and southerly direction. The Arkansas and the Red are the only streams that have forced a passage through these mountains, which, though low, y a great extent of country and are covered with wood.

n Labrador westward a line of elevated ground, not entitled to be called mountainous, as its st known elevation does not exceed 2000 feet, forms the watershed between the basin of the wrence and the great lakes, and the streams which flow northwards to Hudson's Bay. It is, er, cut through by the Nelson river; and, after separating the valleys of the Saskatchawan and urchill, it either sinks down into the great plains of this region or extends north-eastward en Hudson's Bay and the Great Slave Lake.

E OF THE CULMINATING POINTS OF THE MOUNTAINS OF NORTH AMERICA.

CIPAL CHAIN,—		Feet.
rdillera of Veragua,	*Silla de Veragua* (Isthmus),	9,000
„ Guatemala,	*Volcano d' Agua*,	14,900
	Fuego,	14,700
„ Mexico,	*Volcano of Popocatepetl*,	17,735
	Orizaba,	17,388
	Intaccihuatl,	15,700
	Nevado de Toluca,	15,156
	Coffre de Perote,	13,514
ocky Mountains,	*Spanish Peak*,	11,000
	James' Peak,	11,320
	Long's Peak or Bighorn,	13,575
	Mount Hooker, Between 52° and 53° N. lat.	15,700
	Mount Brown, Between 52° and 53° N. lat.	16,000
alifornian or Maritime Range,	*Mount Hood*,	12,000
	Mount Rainier,	10,000
	Mount St. Helen's,	12,000
	Mount Baker,	10,000
	Mount Edgecumbe,	3,000
	Mount Fairweather,	14,750
	Mount St. Elias,	17,900
lleghany Range,	*East Peak Volcano*, Alashka,	3,500
	Roan mountains, North Carolina,	6,038
	Black Mountain, North Carolina,	6,476
	Mount Washington, New Hampshire,	6,428
	Mount Adams, do.	5,960
	Mount Jefferson, do.	5,860
	Mount Madison, do.	5,620
	Mount Monro, do.	5,510
	Mount Franklin, do.	5,050
	Mount Pleasant, do.	4,920
	Moosheloc, do.	4,620
	Grand Monadnock, do.	3,450
	Kearsarge mountains, do.	2,460
	Katahdin, Maine,	5,385
	Bald mountains, do.	4,000
	Mansfield Mountain, Vermont,	4,280
	Camel's Rump, do.	4,190
	Killington Peak, do.	3,675
	Ascutney, do.	3,320
	Saddle Mountain, Mass.	4,000
	Mount Marcy, New York,	5,200
	Round Top, Catskill mountains, New York,	3,804
	Peaks of Otter, Virginia,	4,260

S, GULFS, AND STRAITS.—1. In the Arctic Ocean:—*Kotzebue Sound, Elson's Bay, Mackenzie's Dease's Inlet, E. Smith's Bay, Harrison's Bay, Liverpool Bay, Franklin Bay, Darnley Bay, George oronation Gulf, Bathurst Inlet, and Melville Sound, Prince Regent Inlet, Fury and Hecla* . 2. On the Atlantic Coast:—*Hudson's Bay*, a large inland sea, between 51° and 64° N. lat., ° and 96° W. long., stretching about 800 miles from N. to S. exclusive of James's Bay, and 600

from E. to W., and containing a surface of about 300,000 square miles. It is navigable only for a few months in the year, being at other times frozen over, or obstructed by drift ice. It is full of sand-banks, islands, and reefs; and its shores are rocky and barren. The southern portion, named *James's Bay*, penetrates southward about 260 miles, with a breadth of 180. On the west coast are *Chesterfield Inlet*, a very narrow channel penetrating westward for 270 miles; *Wager River* and *Repulse Bay*. Hudson's Bay communicates with the Atlantic by *Hudson's Strait*, which is about 500 miles in length, and at the narrowest part more than 80 miles wide. *Cumberland's Strait* and *Frobisher's Strait*, are two partially explored inlets on the west side of Davis' Strait. *Gulf of St. Lawrence*, a large sea inclosed by Newfoundland on the east, Nova Scotia, New Brunswick, and Canada, on the south and west, by Labrador on the north, and communicating with the ocean by the *Strait of Belleisle* to the north, and a nameless strait to the south of Newfoundland. The *Bay of Fundy* separates Nova Scotia from New Brunswick; it is about 180 miles in length by 38 in breadth, and contains an area of 6000 square miles. The shores are high and rocky, and the navigation dangerous, on account of the strength of the tides and the prevailing fogs. The tide sometimes rises 70 feet, and rushes up the bay with incredible velocity. *Passamaquoddy Bay*, between Maine and New Brunswick. *Penobscot Bay* and *Massachusetts Bay*, on the east coast of New England. *Narragansett Bay* in the state of Rhode Island. *Long-Island Sound*, between Long-Island and Connecticut, 120 miles in length, by from 2 to 20 in breadth, and communicating with New York harbour by a narrow strait named *Hell Gates*. *Delaware Bay*, the estuary of the Delaware river, leading up to Philadelphia, is filled with numerous shoals and banks, among which there are several ship channels; it is 16 miles wide at the mouth, but higher up expands to about 30. *Chesapeake Bay*, a noble estuary, between Virginia and Maryland, extending N.-S. about 180 miles, with a breadth varying from 25 to 7. It opens to the Atlantic between Cape Charles and Cape Henry, usually called the Capes of Virginia, which are about 14 miles asunder. The bay is generally deep, contains many commodious harbours, and affords a safe and easy navigation for vessels of the greatest burden. It receives the waters of the large rivers Susquehanna, Potomac, Rappahannock, York, and James. *Albemarle Sound*, an estuary on the coast of North Carolina, about 60 miles in length, and from 4 to 15 wide, communicates with *Pamlico Sound*, a gulf which extends along the coast southward for about 100 miles, with a breadth varying from 8 or 10 to 25; and is separated from the ocean by a series of long and very narrow ridges, or banks of sand. It terminates south-west with the two large estuaries of Pamlico River, and Neuse River, and communicates with the ocean by *Roanoke Inlet*, *New Inlet*, *Ocracock Inlet*, *and Core Sound*, which extends south to *Old Topsail Inlet*. On the outside of the banks is *Raleigh Bay*; and farther south is *Onslow Bay*, likewise separated from the mainland by a series of narrow banks, which form, inside, a long and narrow channel navigable by small vessels. *Long Bay*, between Cape Fear and Georgetown entrance, on the coast of Georgia and South Carolina. *St. Helena Sound*, *Port-Royal Entrance*, *Calibogue Sound*, *Daufuskee Sound*, *Wassaw Sound*, *Ossabaw Sound*, *St. Catharine's Sound*, *Sapelo Sound*, *Doby Inlet*, *Alatamaha Sound*, *St. Simon's Sound*, *St. Andrew's Sound*, and *Cumberland Sound*; on the coast of Georgia. The *Gulf of Mexico* is a large inland sea, about 1100 miles in length from east to west, and about 700 or 800 from north to south, bounded by the coasts of Florida, Alabama, Louisiana, and Texas on the north-east, north, and north-west; by Mexico and Guatemala on the west, south-west, and south; and by Cuba and the channels on each side of it, on the south-east. Along the coasts are the minor bays of *Chatham*, *Galliean*, *St. Charles*, *Carlos* or *Charlotte Harbour*, *Espiritu Santo* or *Tampa*, *Vacassassa*, *Santa Fé*, *Appalachee*, *Apalachicola*, *St. Joseph*, *St. Andrew*, *Choctahatchee*, and *Pensacola*, in Florida; *Mobile* and *Pascagoula*, in Alabama; *Chandeleur*, *Atchafalaya*, *Coto-blanche*, and *Vermilion*, in Louisiana; *Galveston*, *West*, *Espiritu Santo*, in Texas; *Campeché*, between Mexico and Yucatan. This gulf is free from banks, and contains only a few small rocky islands on the coasts of Yucatan, with the Florida reef near its eastern extremity. The shores are low, and generally lined with flat sandy islands, not far from the land. There are few harbours, and the rivers which fall into it are obstructed by bars at their mouths, which render them all, except the Mississippi, nearly inaccessible for vessels of large draught. The currents of the gulf are very remarkable. The water which enters it from the Caribbean Sea is soon divided into two portions, the one running east along the coast of Cuba, the other westward, in a curve line through the middle of the gulf round towards the straits of Florida, where it meets the other current, and the two united form the *Gulf Stream*, which passes with great velocity through the comparatively narrow channel between Cuba and Florida. The gulf is also characterized by the high temperature of its water, which is generally 86°; while in the ocean, in the same latitude, it is only 76° or 78°, and even near the equator is only 80° or 81°. The Gulf Stream flows northward through the *Gulf of Florida* or the *New Bahama Channel*, attaining its greatest velocity at the narrowest part of the strait. The *Caribbean Sea* extends along the northern coast of South and Central America, from the mouths of the Orinoco to the Mosquito shore, being about 1400 miles long, with a breadth varying from 350 to 650. Its northern and eastern boundaries are formed by the long range of the West India Islands, through which it communicates with the ocean by numerous channels. The southern shores are generally high and rocky, and contain several large gulfs. The *Gulf of Paria* separates Trinidad from the continent, and is about 100 miles from E. to W. by about 50 in width. It is shallow, with a muddy bottom, and being always placid, affords safe anchorage for any number of vessels. The *Gulf of Maracaybo* or *Venezuela*, forms a deep and wide inlet, terminating with a navigable strait which communicates with the large *Lake of Maracaybo*; the *Gulf of Darien* extends far inland, on the eastern side of the Isthmus of Panama; *Bluefield's Sound*, on the Mosquito shore; and the *Bay of Honduras*, a large open gulf between the Mosquito shore and Yucatan. The navigation of the Caribbean Sea is clear and open; the islands being neither numerous nor extensive. A current from the ocean enters it through the channels among the Windward Islands, by which its force is broken; and at all seasons a current sets from this sea into the Gulf of Mexico. *Bahia de Todos os Santos*, or *All Saints Bay*, a small round gulf on the east coast of Brazil, forming a noble basin studded with islands, and affording safe anchorage for any number of ships. Lat. 13° S. *Rio de la Plata*, the large estuary of the rivers Parana and Araguay, opens from the Atlantic with a width of 170 miles, and gradually diminishes in breadth till it meets the rivers about 200 miles from the ocean. It is much encumbered by sandbanks, and in the upper part becomes very shallow, so that the navigation is intricate and dangerous. *Bahia de S. Mathias*, *B. de San Joseph*, *Bahia Nueva*, *Bahia de los Camarones*, *Bahia de S. Jorje*, *Puerto Deseado* (Port Desire), and *Bahia Grande*; on the east coast of Patagonia. The *Strait of Magellan*, between Patagonia and Tierra del Fuego, extends from the Atlantic Ocean to the Pacific, for about 300 miles, with a breadth varying from 1½ to 40 miles. Its shores are lofty, and generally rugged, and its depth is in some parts very great. The passage is extremely dangerous, owing to the violent currents, and to the sudden and severe tempests to which the Strait is subject. *Gulf of Trinidad*, *Gulf of Peñas*, *Gulf of Guayaquil*, on the west coast of South America. *Bay of Panama*, which forms the southern side of the great isthmus, is about 130 miles in length with a breadth nearly equal. On its east side is the *Bay of Santo Miguel*, and, on the west, the *Gulf of Parita*. Towards the north-east shore are the *Pearl Islands*, where small quantities of pearls are procured; and in the north-west are a few rocky islands, which form the harbour of Panama. *Gulf of Nicoya*, on the coast, south of the lake of Nicaragua. The *Gulf of California* or the *Vermilion Sea*, extends northward between the mainland of Mexico and the peninsula of California, for about 700 miles, with a breadth varying from 40 miles to 180. Many rocky islands skirt the western shore; and on the eastern is the large island of Tiburon. Pearls

used to be collected here during the last century, but the quantity has diminished. It receives at its northern extremity the river Colorado. The *Port* or *Bay* of *San Francisco*, on the coast of New Albion, extends inland about 50 miles, with a breadth of 20. It contains many good harbours, and receives the waters of three considerable rivers. *Queen Charlotte's Sound*, a large navigable inlet or strait, between the mainland and the island of Quadra and Vancouver. *Nootka Sound*, a place of some notoriety, on the west or oceanic coast of that island. *Norfolk Sound*, *Cross Sound*, *Admiralty Bay*, *Prince William's Sound*, *Cook's Inlet*, *Bristol Bay*, *Norton Sound*, all on the north-west coast.

CAPES.—*Wolstenholme*, the most westerly, and *Chidley*, the most easterly, point of the south side of Hudson's Straits; *Charles*, the most easterly point of Labrador; *Race*, the most easterly point of Newfoundland; *Canso*, the north-east point of Nova Scotia; *Sambro Head*, near the entrance of Halifax harbour; *Sable*, the south-east point of Nova Scotia; *Cape Ann*, at the northern side, and *Cape Cod*, at the southern side of the mouth of Massachusetts bay; *Montauk Point*, the east end of Long-island; *Sandy Hook*, the south side of the entrance to New York harbour; *Cape May*, at the north side, and *Cape Henlopen*, at the south side of the entrance of the Delaware; *Cape Charles* and *Cape Henry*, or the *Capes of Virginia*, at the entrance of the Chesapeake; *Cape Hatteras*, *Cape Lookout*, and *Cape Fear*, on the coast of North Carolina; *Cape Romain*, on the coast of South Carolina; *Cape Canaveral*, *Cape Florida*, and *Cape Sable*, on the coast of Florida; *Catoche*, the north-east point of Yucatan; *San Antonio*, the most westerly point of Cuba; *Cabo de Cruz*, the most westerly, and *Maysi*, the most easterly point of the south coast of Cuba; *Negril*, the most westerly, and *Morant*, the most easterly point of Jamaica; *Tiburon*, the most westerly, and *Enzano*, the most easterly point of Hayti; *Gracias a Dios*, north-east point of Guatemala, in the Caribbean Sea; *San Roque* and *St. Augustine*, on the north-east coast of Brazil; *Frio*, on the coast of Brazil, north of the Tropic of Cancer; *Santa Maria* and *San Antonio*, at the entrance of the Rio de la Plata; *San Juan*, the most easterly point of Staten island; *Horn*, the most southerly point of Tierra del Fuego; *Tres-montes* cape and peninsula, on the west coast of Patagonia; *Corrientes*, on the west coast of Mexico; *San Lucas*, the most southerly point of the peninsula of California; *Mendocino*, on the coast of New California; *Romanzoff*, *Prince of Wales*, *Lisburne*, and *Icy Cape*, on the east side of Behring's sea and strait; *Point Pelee*, *Point aux Pins* or *Landguard Point*, and *North Foreland* or *Long Point*, on the north shore of Lake Erie.

RIVERS.—America abounds with rivers, some of which are the largest in the world; and the larger rivers are almost all favourably distinguished by the characteristic of being navigable throughout the greater part of their course. We shall describe them under the two heads of *North American Rivers* and *South American Rivers*.

§ 1. *Rivers of North America.*

The MISSISSIPPI has its sources in the brooks which form the small lake Itaska or La Biche, about 47° 10′ N. lat., on a high table-land about 1500 feet above the level of the sea, and 3200 miles from the mouth of the river, following the windings of the stream, but only 1250 in a straight line. Rising in a region of swamps and wild rice lakes, it flows at first through low prairies, and then in a broken course through forests of elm, maple, birch, oak, and ash, till, at the Falls of St. Anthony, 1100 miles from its source, it tumbles over a limestone ridge, with a fall of 17 feet. The river is here 600 yards wide. Below this point it is bounded by limestone bluffs from 100 to 400 feet high, and first begins to exhibit islands, drift wood, and sand bars. Its current is slightly broken by the Rock River and Desmoines Rapids, which, however, present no considerable obstacle to navigation; and 850 miles below the Falls of St. Anthony it receives from the west the great stream of the Missouri. Above the junction, the Mississippi is a clear, placid stream, a mile and a half wide; below, it is turbid, and becomes narrower, deeper, and more rapid. Between the mouth of the Missouri and the sea, a distance of 1220 miles, it receives its principal tributaries:—the *Ohio* from the east, and the *Arkansas* and *Red River* from the west; and, immediately below the mouth of the latter, it gives off in times of flood a portion of its surplus waters by the outlet of the *Atchafalaya*. It is in this lower part of its course that the river often tears away the islands and projecting points, and, in the season of high water, plunges huge masses of the banks with all their trees into its current. In many places it deposits immense heaps of drift wood on its mud bars, which become as dangerous to the navigator as rocks and shoals at sea. Below the Atchafalaya it discharges a portion of its waters by the *Lafourche* and the *Iberville*; but the greater part of its contents flows on in the main channel, which passes through a flat tract, by New Orleans, and reaches the Gulf of Mexico at the end of a long projecting tongue of mud, formed by the deposits of the current. Near the sea it divides into several channels, here called passes, with bars at their mouths, on which are from 12 to 16 feet of water. The water is white and turbid, and tinges the sea to the distance of several leagues. The river begins to rise in the end of February or the early part of March, and continues to increase irregularly till the middle of June, generally overflowing its banks to a considerable extent. Above the Missouri the flooded bottoms are from 5 to 8 miles wide; but below that point, they extend to a width of 40 or 50 miles. Below the mouth of the Ohio, no part of the western bank affords a spot suitable for the site of a large town, or hardly even for a road secure from overflow. On the eastern side there are several points where the hills approach the river, and present good sites for towns; but from Memphis to Vicksburg, a distance of 365 miles, the whole tract consists of low grounds subject to inundation; and below Baton-Rouge, where the line of high land wholly leaves the river, and passes off to the eastward, there is no place where a settlement is practicable beyond the edge of the river border, which is higher than the marshy tract beyond it; and by the construction of artificial embankments, called levées, a few feet in height, is entirely secure from inundation. But the tendency of this embankment is to shut up numerous outlets, by which the superfluous waters formerly escaped, and thus to raise the volume and height of the river, and thereby to increase the danger of overflow. Before the introduction of steam vessels, the river was navigated by keel-boats, which, in going upward, were rowed along the eddies of the stream, or drawn by ropes along shore; and by this tedious process more than three months were consumed in ascending from New Orleans to the Falls of the Ohio, a passage which is now made in ten or twelve days. The first steam-boat was introduced in 1810; there are now upwards of 500 on the river.

The MISSOURI has a much longer course than the Mississipi, its extreme length, from its sources to the Gulf of Mexico, being about 4500 miles. It is navigable to the foot of the great falls, about 3800 miles from the sea, and steam-boats have gone up the stream 2200 miles from its junction with the Mississippi. It rises from the Rocky Mountains; some of its sources are only about a mile from those of the Columbia. Its headwaters have not been thoroughly examined; but, in the earlier part of its course, it has been ascertained to be a foaming torrent, which forces its way out of its mountain barriers through a remarkable chasm of perpendicular rocks, nearly 6 miles in length, and 1200 feet in height, called the Gates of the Rocky Mountains. Sixty miles below the last mountain ridge it forms a succession of falls and rapids, inferior in grandeur only to those of Niagara. In a course of 17 miles the river has a descent of 360 feet; and in that space, besides the Great Fall of 90 feet perpendicular and 300 yards wide, and a fine fall of 50 feet, there are several others of from 12 to 20 feet. The Missouri now flows through vast prairies, and, soon after receiving the *Yellowstone* s, large

navigable stream, takes a south and south-east course to the Mississippi. A slight cause might have turned its current towards Hudson's Bay; for the Souris or Mouse River, a branch of the Assiniboine, rises within a mile of its bed, near the point where it begins to take its southerly course. Its principal tributaries are from the west; the *Platte*, a wide shallow stream, the *Kansas*, and the *Ilaya*, are the principal. The Missouri not only has a longer course than the Mississippi, but it brings down a greater volume of water, and imparts its own turbid character to the united stream; yet it loses its name at the confluence. It has an average velocity of 5 miles an hour when in flood, and of 4 or 3 when lower, while that of the Mississippi is only about 3. The obstructions to the navigation of the Missouri are of the same kind as those of the Lower Mississippi, but they are much more numerous and formidable. The channel is rendered intricate by the great number of islands and sand-bars, and in many places the navigation is hazardous from the rafts, snags, falling banks, &c. It begins to rise early in March, and continues to swell till the middle or the end of July, when the summer floods of its most distant tributaries come down. During this period there is sufficient depth for steamers of almost any draught; but during the rest of the year, the river is scarcely navigable through any great distance by boats drawing more than two feet and a-half.

The OHIO (*La Belle Riviere* of the early French settlers) is, next to the Missouri, the most important tributary of the Mississippi. The *Alleghany*, which rises near the edge of Lake Erie, and the *Monongahela*, which issues from the mountains of Virginia, unite at Pittsburg, and take the name of *Ohio*. From Pittsburg the Ohio has a course of 950 miles to the Mississippi, receiving in its progress numerous navigable streams on both sides: from the north, the *Big-Beaver*, *Muskingum*, *Scioto*, *Miami*, and *Wabash*; and from the south, the *Kanhawa*, *Big-Sandy*, *Kentucky*, *Green*, *Cumberland*, and *Tennessee*. The whole region drained by this fine river includes an area of 200,000 square miles, rich in the most useful natural productions, and enjoying a mild and healthful climate. From Pittsburg to its mouth, the Ohio has a descent of 400 feet, or 5 inches to a mile; its current is gentle, and is nowhere broken except by the rapids at Louisville, which do not obstruct the navigation at high-water. The breadth of the stream varies from 400 yards to 1400. The annual range between high-water and low-water is about 50 feet, but sometimes exceeds even that variation. In August, September, and October, the water is at the lowest; in December, March, May, and June, at the highest. The navigation is usually impeded by ice in winter, and, in the upper part of the river, by drought in summer; but during the greater part of the year the stream is covered with all sorts of river craft and steamers, carrying on an active trade.

The ARKANSAS exceeds the Ohio in size; but a considerable part of its course lies through barren, sandy tracts, and in its navigable qualities it is far inferior to the other. In the dry season the river is shallow, and in some places wholly disappears, or leaves only stagnant pools, separated by sand-banks; even its floods are so uncertain, and their rise and fall so rapid, that the stream is nearly useless for navigation. Steam-boats ascend, but with difficulty, to Fort Gibson, only 420 miles from the Mississippi; though the whole length of the river is estimated at 2500 miles.

The RED RIVER rises in the Rocky Mountains, within the Mexican territory, and, flowing eastward, joins the Mississippi in Louisiana. It is navigable for 1200 miles; but its channel was formerly so much choked up by accumulated masses of drift wood, through a distance of 160 miles, in Louisiana, that the greater part of the water was forced out of the bed of the river into numerous bayous or lakes. This obstruction has been lately removed, at an expense to the United States of 300,000 dollars, and steam boats can now ascend the stream throughout the whole of its navigable course.

The ILLINOIS is formed in the north-eastern part of the State of the same name, by the junction of two large streams, the *Kankakee* from Indiana, and the *Des-Plaines* from Wisconsin, from which it flows in a south-westerly course of 300 miles to the Mississippi. It is navigated for 260 miles to the rapids at Ottawa; when swollen by rain it overflows its banks, and the Mississippi, when full, sets back its waters to a distance of 70 miles from its mouth. In some places the river expands to such a width as to have the appearance of a lake; and one expanse of this kind, 20 miles in length, has received the name of *Lake Peoria*. The Kankakee rises in Indiana, within about two miles of the river St. Joseph, which falls into Lake Michigan; and in the wet season, boats may pass from the one river to the other. The Des-Plaines runs for some distance parallel to the shores of Lake Michigan, and not more than 10 miles from the lake, with which there is a natural communication through the Chicago, which is often passed by loaded boats during the spring floods.

The names and length of the principal rivers of the Mississippi basin are stated in the following Table:—

	Miles.		*Miles.*
MISSISSIPPI,	3,200	Salt,	250
Missouri,	3,300	Maramec,	200
Yellowstone,	1,000	St. Francis,	450
Little Missouri,	300	White,	600
Shienne,	300	Arkansas,	2,500
Quicourt,	500	*Canadian*,	1,000
Platte,	1,200	*Neosho*,	800
Kansas,	800	Red River,	2,000
Osage,	500	*Washita*,	800
Gasconade,	300	Ohio,	1,250
Jacques,	600	*Alleghany*,	320
Sioux,	500	*Monongahela*,	300
Grand,	500	*Kanawha*,	450
Charlton,	200	*Kentucky*,	260
St. Peter's,	500	*Green*,	300
Penaca, or Turkey,	200	*Cumberland*,	600
Iowa,	350	*Tennessee*,	1,500
Chacaguar,	200	*Muskingum*,	200
Des-moines,	600	*Scioto*,	200
St. Croix,	300	*Miami*,	173
Chippewa,	300	*Wabash*,	550
Wisconsin,	600	*White River*,	260
Rock River,	450	Hatchy,	200
Illinois,	500	Yazoo,	200
Kaskaskia,	300	Big Black,	200

The ST. LAWRENCE flows from the N. E. extremity of the Lake Ontario, where its stream, for the first forty miles, is divided by a multitude of islets, some consisting of bare rocks, some covered with pine groves, and some presenting smiling meadows. This space is called the *Lake of the Thousand Isles*; but the real number of islands is said to be 1692. About 110 miles from Lake Ontario, a series of rapids interrupts the navigation, but they are now passed by the Cornwall Canal; and below the Lake St. Francis are the *Cedar Rapids* and the *Cascades*, difficulties which are avoided by a short cut called the Military Canal. Below this, the river meets its principal tributary, the *Ottawa*, and the two rivers together form three islands, named Montreal, Jesus, and Perrot. Between Montreal and the southern shore is the beautiful but rapid and dangerous *Sault St. Louis*, which is passed by means

of the La Chine Canal. From this point there is no considerable obstruction to the navigation, but the current of the river is in some places still rapid. Nearly midway between Montreal and Quebec the river forms a wide expanse named *Lake St. Peter;* but further down the width continues pretty regular, till it passes Quebec, below which it encircles the Isle of Orleans, and then gradually and regularly expands into a wide estuary, which may be considered as terminating with the island of Anticosti, about 700 miles from Lake Ontario. At Quebec the width of the river is only 1314 yards; at the mouth of the river Saguenay, 120 miles further down, it is 18 miles wide; at Cap de Monts, or Mont Pelee, 130 miles below, it is 25 miles; and where at last it opens into the gulf, the estuary is nearly 105 miles across. The tide is perceptible at Trois Rivieres, 430 miles above Anticosti. The water becomes brackish 21 miles below Quebec, and is quite salt at Kamouraska, 75 miles lower down. Vessels of 600 or 700 tons reach Montreal, which is 580 miles from Anticosti, with little difficulty, as there is, during this distance, only one rapid, named Richelieu, 25 miles below Trois Rivieres. The river is here so contracted and obstructed by rocks as to leave only a narrow ship channel, in which, at ebb tide, a rapid is formed that cannot be passed without great care; but at high tide, when the water rises 15 or 18 feet, the rapid disappears. Between Lake Ontario and Montreal, the river bears the name of *Kataraqui*, or *Cataraguay*. Below Quebec the St. Lawrence is never frozen over, but the navigation is impeded in spring by the large masses of ice which are floated down from the upper districts, and kept in motion by the combined action of the current and the tides, presenting a most remarkable and almost terrific scene. The channel does not become clear till about the second week of May, and vessels attempting a passage sooner are often wrecked, or crushed to pieces by the floating masses. The principal tributary is the *Ottawa*, which flows from Lake Temiscaming, and much resembles the St. Lawrence itself in its great breadth and lake-like expanses. At its confluence with the St. Lawrence it spreads out into the Lake of the Two Mountains; and 30 miles up its stream are the Long Sault Rapids, which are passed by means of the Grenville Canal. Steamers ascend to Bytown and Hull at the foot of the Chaudieres or Kettle Falls, the principal of which is 60 feet high. Above these there are numerous rapids. The other principal affluents on the left bank are: the *St. Maurice*, at Three Rivers; the *Batiscan*, the *St. Anne*, the *Jacques Cartier*, and the *Saguenay*, a large and broad river, the outlet of Lake St. John. On the right bank: the *Oswegatchie*, *La Grasse*, *Raquette*, and *St. Regis*, from New York; the *Chateauguay*, above Montreal; the *Richelieu*, the outlet of Lake Champlain; the *Yamaska*, *St. Francis*, and *Nicolet*, at Lake St. Peter; the *Besancour*, *Gentilly*, *Du Chene*, *Chaudiere*, and *Etchemin*, between St. Peter's and Quebec.

The RIVER ST. JOHN flows through the disputed territory to the north of the State of Maine, and the province of New Brunswick, into the Bay of Fundy. It has a fall of 75 feet just after entering New Brunswick, and is navigable to that point by flat-bottomed boats, though the lower part of its course contains several rapids. Vessels of 50 tons go up to Fredericton. The *Miramichi* rises near the St. John, and, interlocking with some of its tributaries, affords a good navigable channel almost across the country.

The ST. CROIX, the outlet of the Grand, Umquemengag, and Schoodie lakes, forms the boundary between New Brunswick and Maine, and falls into Passamaquoddy Bay.

The PENOBSCOT collects its waters from the northern part of the State of Maine, and has a course of about 300 miles into Penobscot Bay. It is navigable for the largest vessels to Bangor, 60 miles from the sea; above which point there is a fall of 60 feet; and the navigation even of the lower portion is closed for four or five months in the year by ice.

The KENNEBEC is the outlet of Moosehead lake in Maine, and flows south to the Atlantic. Its channel is interrupted by falls, and is navigable only for small vessels 50 miles up to Augusta, where the tide stops. Near its mouth it is joined by the *Androscoggin*, when the united stream takes the name of *Sagadahock*.

The MERRIMACK flows south through the middle of New Hampshire, into the Atlantic, below Newburyport, in Massachusetts. By the aid of short canals boats are able to go up to Concord, the capital of the state.

The CONNECTICUT rises in the north-east corner of New Hampshire, forms the boundary between that state and Vermont, and flows across Massachusetts and Connecticut into the eastern part of Long-island Sound. There is a sand-bar at its mouth which impedes navigation; but notwithstanding vessels of 10 feet draft go up to Middletown; those of 8 feet, to Hartford, 50 miles from the sea; and smaller vessels proceed 14 miles farther to the head of the tide at Warehouse-point, at the foot of Enfield Falls. Above Enfield, the river has two other falls, at South Hadley and Montague, but is navigated by steam-vessels of light draft, which pass the falls by short canals. Higher up it is rendered navigable for boats to Bath, in North Hampshire, by means of locks and canals. Length of its course, 400 miles.

The HUDSON, which rises in a marshy tract south-west of Lake Champlain, and has a southern course of 325 miles to New York Bay, is the only river of the Atlantic slope whose navigation is not terminated by its passage through the Appalachian mountains. Its head waters rise at an elevation of 4000 feet; but the bed of the river, in the lower part of its course, lies deep below the surface of the adjacent country, admitting the tide 160 miles up to Troy. It is navigable by sloops to Troy, and by ships to Hudson, which is only 30 miles lower down. Between 28 and 36 miles above New York, the Hudson forms an expanse like a lake, named the Tappan Sea, which varies in width from 2 to 5 miles; and, for 20 miles farther down, the channel is bordered on its western side by a range of perpendicular cliffs, which rise from 100 to 500 feet above the water, and are named the Pallisades. The picturesque beauty of its banks, and the legendary and historical interests associated with numerous spots, combine to render the Hudson the classic stream of the United States. The *Mohawk*, its principal tributary, is a turbulent stream, which, in a course of 150 miles, falls more than 430 feet.

The DELAWARE rises in the Catskill mountains, in New York, is formed by two main branches, and flows southwards into the Atlantic, where it forms a wide estuary, below Philadelphia, near which it is joined by its principal tributary, the *Schuylkill*. It is navigable downwards by rafts and arks nearly from its source; but at Trenton the navigation upward is stopped by a great fall, below which it meets the tide 140 miles from the sea. Sloops ascend to this point, and the largest ships reach Philadelphia, 35 miles below. The Schuylkill is navigable 6 miles to Philadelphia by ships of 300 tons; but above that the navigation is stopped by its great fall, and higher up by shoals and rapids.

The SUSQUEHANNA is a long and broad, but generally shallow river, with a course of about 500 miles, chiefly through Pennsylvania, into the head of the Chesapeake Bay. Its principal trunk is so much obstructed by bars, and broken by rapids, as to afford comparatively little aid to navigation, without artificial help; but, as there is nowhere any perpendicular fall, rafts and flat boats easily descend to Middletown, during the season of high water; and small steam-boats ply between Wilkesbarre and Owego.

The POTOMAC is formed by two branches, the most northerly of which rises in the great Back Bone mountain, at the west border of Virginia and Maryland, and the southern branch in Pendleton county, a little further south. It has a very crooked course of 400 miles into the Chesapeake, where its mouth is eight miles wide. Seventy miles up, the channel is still three miles wide, and at Alexandria, nearly 100 miles up, it is above one mile. Between Washington and the Chesapeake the depth varies from 18 feet to 120, but is generally about 30 or 40; above Washington it diminishes to 10 or 12. The tide flows to Georgetown, a little above Washington, and to that point the river is navigable for vessels of

moderate burden. Three miles above Georgetown is a series of rapids called the Little Falls; and a few miles higher up are the Great Falls, where the river descends 76 feet in the distance of a mile and a half, making in one place a perpendicular plunge of 15 feet. The Great Falls form one of the grandest scenes in the United States.

The PATUXENT flows through Maryland into the Chesapeake, in a course nearly parallel to that of the Potomac, about midway between it and the western shore of the Chesapeake. It is navigable 40 miles to Nottingham for vessels of 250 tons, and for large boats to Queen Ann, 15 miles farther up. Its mouth forms a wide estuary, 20 miles north of that of the Potomac.

The RAPPAHANNOCK, rising in the Blue ridge, in Virginia, receives the *Rapid-Ann* from the same chain; and, after falling over the primary ledge into the low country at Fredericksburg, where it meets the tide, 100 miles from its mouth, becomes navigable for vessels of 140 tons; larger vessels may go up 60 miles. In the lower part, however, of its course, it is rather an estuary than a river, expanding to a width of five miles before it joins the Chesapeake.

YORK RIVER, formed by the junction of the *Mattapony* and the *Pamunkey*, in Virginia, partakes throughout its whole course, rather of the character of a narrow bay than of an inland stream. At West Point, the place of confluence, 40 miles from the Chesapeake, it is from 2 to 3 miles wide, with 18 or 20 feet depth of water. The Pamunkey and the Matapony are both navigable by schooners about 40 miles from their mouths.

JAMES RIVER rises from the Alleghany mountains in the western part of Virginia, and enters from the Blue ridge over the Irish Falls. After clearing the hills, it descends into the low country at Richmond, by a fall of 70 feet in the distance of eight miles; below Richmond it gradually becomes wider and deeper, and, in the lower part of its course, expands into a long and spacious estuary with sufficient depth for the largest ships. Vessels of 600 tons go up to City Point, 75 miles from the Chesapeake; vessels of 15 feet draught reach Warwick, 30 miles farther up; and, with the exception of a bar, on which there are only 10 feet, there are 13 feet of water from this point to Rocketts in the port of Richmond; above which, the depth is only six feet. The tide flows to Richmond. It is excluded from the Chesapeake. Within the mouth of the estuary are *Hampton Roads*, a secure and spacious anchorage, sufficiently deep for the largest ships; and, connected with it, is the broad bay called *Elizabeth River*, which forms a capacious inner harbour.

Cape Fear or *Clarendon river*; *Chowan* or *Roanoke*; *Tar*, *Taw* or *Pamlico*, and *Neuse*, are all in North Carolina; but they, as well as all the other streams of that state, have short courses and shallow streams, though, by artificial means, some of them have been made navigable to some distance inland. Nearly the same character will apply to the numerous rivers of South Carolina and Georgia, the principal of which we shall therefore merely name, in their order, proceeding southward, viz. *Waccamaw*, *Pedee*, *Great Pedee*, *Lynche's river*, and *Black river*, all of which have a common estuary in *Winyaw Bay*, which opens to the Atlantic by *Georgetown Inlet*; the *Santee*; the *Cooper* and the *Ashley*, whose common estuary forms the harbour of Charlestown; *Ponpon* or *Edisto*; *Combahee*; *Coosaw*; *Broad river*; *Savannah*, navigable for steam-boats of 150 tons burden, for 250 miles from the sea; the *Ogeechee* and *Canoochee*, which fall into *Ossaba Sound*; *Alatamaha*; *Turtle*; *Satilla*; *St. Illa's*; *St. Mary's*; all in Florida, *St. John's*. The last is a somewhat important stream. It flows northward through the middle of Northern Florida, expanding at last a wide estuary from two to six miles wide. The bar at its mouth is never passable by vessels of more than 11 feet draught, although within the bar there are 15 feet water for 50 miles up the river. The other principal rivers of Florida are the *Ocilla* or *Ausilla*; *St. Mark's*; *Ocklockonee*; *Apalachicola*, navigable for 100 miles; *Escambia* and *Chocktawhatchee*; all of which flow into the Gulf of Mexico.

The MOBILE, in Alabama, is formed by the junction of the *Alabama* and the *Tombekbee* or *Tombigbee*, 30 miles above Mobile bay, in the Gulf of Mexico. A few miles below the junction it gives off a large branch, called the *Tensaw*, which also receives an arm from the Alabama, and reaches Mobile bay below Blakely. The *Tombigbee* is formed by the confluence of two large streams, the *Tombekbee* from Mississippi, and the *Black Warrior* from the northern part of Alabama. It admits vessels drawing six feet water to St. Stephen's, 93 miles from the bay, and steam boats of moderate burden to Tuscaloosa, on the eastern branch, 300 miles, and to Columbus, in Mississippi, on the western branch. The *Alabama* is formed by the junction of the *Coosa* and the *Tallapoosa*, both of which have their sources in the western part of Georgia. It is navigable to Claiborne, 100 miles from the bay, by the same class of vessels that go up to St. Stephen's, and by the smaller steam-boats for 200 miles above the confluence, along both branches. The rivers of Alabama flow in deep beds and at some places during the spring floods 50 or 60 feet above their low-water level. Their unimproved navigable channels is much diminished by the excessive winding of their courses; and during six or eight months of the year the navigation is impeded, and for part of that period suspended, by the shoals and bars, which become impassable at low water.

The PEARL RIVER, in Mississippi, rises in the centre of the state, and flows through a populous and fertile region into the Rigolets or outlet of Lake Pontchartrain. Its mouth is obstructed by sand banks, besides which there are numerous shoals in the river; but steam-boats have ascended to Jackson, a distance of 200 miles, at high water.

The SABINE RIVER flows into the Gulf of Mexico, forming the boundary between Louisiana and the new republic of Texas. It is navigable about 300 miles upward, but its mouth is obstructed by a bar. Near its mouth it expands into a large lake, which is nearly filled up with oyster banks, and which also receives the waters of the *Rio Neches* from Texas, which is navigable for 100 miles.

The *Trinidad* and *San Jacinto* both fall into *Galveston Bay*, which forms their estuary; it is 30 miles where deep, and is crossed by bars with only five feet water in the highest tides. The main channel, however, through the outer bar, has a depth of 13 feet, and within it, contains a secure anchoring ground in five fathoms. The *Rio Bernard de Dios* (God's arm) rises on the north-west border of Texas and reaches the gulf, after a winding course of 600 miles. The *Rio Colorado* is little inferior to the Brazos, but is at present choked up by a jam of drift-wood about 80 miles from its mouth. The *San Bernard*, *La Vaca*, of Matagorda bay; the *Guadalupe*, and the *San Antonio*, which unite before entering the basin of Espiritu Santo, and the *Nueces*, are inferior but navigable streams. The spacious but shallow bays which receive most of the rivers of Texas, and the mouths of those that enter the gulf directly, are barred by shifting sand-banks, through which the channels are often intricate, and seldom have more than 8 or 10, never more than 12 or 13 feet of water.

The RIO BRAVO DEL NORTE, called also the RIO GRANDE or LARGE RIVER, rises from the Sierra Verde in New Mexico, about 40° N. lat., and has a long south-easterly course into the Gulf of Mexico, where it forms the south-western border of the territory claimed by the Texians. It scarcely deserves the name which it bears, as, when compared with the principal rivers of America, it cannot be considered a *great* river. The lower part of its channel is generally only about 200 yards wide, and is so shallow, in many places, that vessels drawing 5 or 6 feet of water cannot ascend more than 100 miles in the ordinary state of the river. Its current is exceedingly rapid, and its banks steep. It is navigable at all seasons for steam-boats drawing 3 or 4 feet of water, as far as Camargo, about 200 miles from its mouth. Its whole course is estimated at 1200 miles.

The *Usumasinta*, a fine river of Central America, rises in the district of Peten in the province of Verapaz, near the source of the Belize, and flows northward to the Bay of Campeche, which it enters to the westward of the Lake of Terminos. Its principal mouth is at the port of Victoria.

The RIO COLORADO falls into the northern extremity of the Gulf of California, after a course of 640 miles; but its sources have not been explored. The depth at its mouth is not more than six feet, and the breadth scarcely exceeds 200 yards. Sixty miles from the sea it is joined by the *Rio Gila*, which rises from the Sierra Mongollon, in the Rocky Mountains, about 34° 20′ N. lat. The country through which these rivers flow is a sandy desert, destitute of good water, and subject to excessive heat.

The OREGON or COLUMBIA RIVER rises in the Rocky Mountains, about 54° N. lat., and has a westerly course of about 1000 miles into the Pacific Ocean, where it forms a wide estuary; but it is infested with breakers, and as the sea rushes over the bar with great violence, the ingress and egress are always difficult. About long. 121° W. it forms a great fall, where it descends in one rapid 57 feet; and soon after passes through a mountain chain, where its width is contracted to 150 yards. The tide at its mouth rises 8½ feet, and ascends the stream 180 miles. Vessels of 300 tons may reach the Multnomah, about 60 miles below the great falls, and sloops go up nearly to the rapids. It abounds with the finest salmon, and with seals, whose skins form a principal article of export from the river.

FRASER RIVER rises from Moose Lake in the Rocky Mountains, and falls into the southern part of Quadra and Vancouver's Sound, or the Strait of Juan de Fuca.

The MACKENZIE RIVER issues from the great Slave Lake, and flows with a broad and majestic stream in a north-westerly direction to the Arctic Ocean. The Mackenzie may indeed be considered as only a continuation of the river *Athabasca* or *La Biche*, which rises at Mount Brown in the Rocky Mountains, between 55° and 56° N. lat., and flows into Lake Athabasca. The *Ungiyah* or *Peace River* also flows from a valley of the Rocky Mountains, partly into the same lake, and partly into the *Slave River*, which issues from it, and carries its surplus waters to the Great Slave Lake.

The *Coppermine River*, discovered by Hearne in 1771, falls into the Arctic Ocean at York Archipelago.

The *Thlew-ee-cho-dezeth* or *Great Fish River* has its source in Lake Sussex, N. lat. 64° 26′, W. long. 108° 20′, and flows to the north-east, falling into a gulf which opens to the Arctic Ocean in N. lat. 66° and W. long. 95°. Its stream is broken by many falls, and forms a number of considerable lakes. This river was first explored by Captain Back, in 1834.

The *Saskatchawan River* flows in two great branches from the Rocky Mountains eastward into Lake Winnipeg, which also receives the *Assinoboin*, *Moose*, *Red*, and *Winnipeg* rivers, from the south; and discharges its surplus waters by the *Nelson*, which enters Hudson's Bay at Fort York. The *Severn* flows from Favourable Lake, and has a course of 250 miles N.E. to Hudson's Bay.

§ 2. *Rivers of South America.*

The MARANON, ORELLANA, or AMAZON, is formed by the union of the *Tunguragua* and the *Ucayle*, 5° 18′ S. lat., 73° 50′ W. long. The Tunguragua issues from the Lake Llauricocha in Peru, within 60 miles of the Pacific Ocean, in 10° 30′ S. lat.; while the Ucayle is formed by the junction of the *Apurimac* and the *Paro*; the former of which has its sources in the mountains to the north-west of Lake Titicaca, and the latter, also named *Rio Beni*, issues from a small lake to the south-east of Titicaca. From the great confluence the Marañon flows, with various windings, in an easterly direction, entering the Atlantic Ocean under the equator, and in 50° W. long. The length of its course from the source of the Apurimac to the sea, including all its windings, may be estimated at 4700 miles. The Marañon is studded with islands, many of which are large; and at its mouth forms, with the Araguay, the large islands of Joanes and Caviana. The mouth of its estuary is about 180 miles wide, and the rise of the tide is felt at Obidos, 400 miles inland. Two days before and after full moon the water rushes into it from the ocean, with prodigious force and noise, in two, three, and sometimes four successive waves, each presenting a perpendicular front of 10 to 15 feet. This great river and its tributaries afford perhaps the greatest extent of inland navigation in the world. The Marañon itself is navigable for 2000 miles in a direct line from the ocean. Its channel is deep, uninterrupted by cataracts or rapids, and may be navigated by ships of any burden up to the confluence of the Tunguragua and Ucayle, where, in March 1836, no bottom was found with 35 fathoms or 210 feet. During the swell in the rainy season, the current is rapid; but at other times it may be stemmed not only by steam vessels, but also by the aid of the east wind, which blows without interruption. The ordinary rate of the current is about 3½ miles an hour when the river is full, but it is less in the dry season. At Jaen, 78° W. long., the bed of the river is only 1240 feet above the level of the sea, so that the fall is less than 6 inches a-mile. The country through which it flows is almost in a state of nature, consisting of boundless savannahs and immense forests, which afford cover and subsistence to innumerable wild beasts and reptiles. During the rainy season a great extent of low country, on both sides of the river, is laid under water; and so vast is the mass of water which it pours into the ocean, that its current has been distinctly felt 300 miles from land. Its mouth was discovered in A. D. 1500, by Vincent Yanez Pinzon, one of the captains who sailed with Columbus on his first voyage; and in 1539 its stream was traced downward from Peru by Francisco Orellana, a Spanish adventurer, by whose name it is sometimes called. The Spaniard has been almost deprived of the honour by his having reported that he had met with armed women on its banks, on which account it received the name of the river of the Amazons, which seems now to be the most generally adopted, though it is a pity that geographers would not agree to drop both Amazon and Marañon, and give the river the more sonorous name of its first explorer, Orellana. Its principal affluents on the right are: the *Yacari*, which is navigable for large boats 200 miles; the *Jutay*; the *Juruá*; the *Teffe*; the *Coary*; the *Purus*; the *Madeira*, a very large river, with a course of 1800 miles, deriving its waters from a wide extent of country between 12° and 20° S. lat., and 58° and 68° W. long.; the *Tapajos*; the *Xingu*; and the *Hanapu*: on the left, the *Napo*; *Putumayo* or *Ica*; the *Japura* or *Jupura*; the united stream of the *Negro* and *Branco*, the former of which communicates with the Orinoco by means of the Casiquari, an affluent of the latter. At its mouth the Amazon communicates by a branch round the south side of the island Joanes, with the *Rio Para*, a stream nearly as large as itself, formed by the junction of that branch with the *Araguay*, a large river which drains the central portion of northern Brasil. From the right the Araguay receives from the same region the large river *Tocantins*.

The RIO DE LA PLATA (Silver River) is merely the estuary of the rivers Parana and Uruguay. The *Parana* has its sources in the north-western slopes of the mountains which skirt the coast of Brazil from Rio Janeiro to the island of St. Francisco; and flowing to the south-west receives, near Corrientes, the great river *Paraguay*, which has its sources on the southern slope of the watershed which separates the basins of the Amazon and the Plata, in the south-west part of Brazil, and collects in its progress southward the waters of many large streams, the principal of which are the *Pilcomayo* and the *Vermejo* or *Rio Grande*, from Upper Peru. From Corrientes the united stream of the Paraguay and the Parana flows southwards into the estuary, receiving from the right the *Rio Salado* (Salt River.) The *Uruguay* rises from the Brazilian mountains, to the westward of St. Catherine's Island, and meets the Parana at the head of their common estuary, the Plata. These streams pour down an immense volume of water, which inundates the low country along their banks from February till May. In the lower course of the Parana the water rises generally 12 feet above the lowest level, and leaves a deposit of grey slimy soil, which is very favourable to vegetation. About 48,000 square miles of

country are said to be subject to these periodical inundations. Before it meets the Uruguay, the Parana divides into numerous branches, forming so many islands; and most of the channels are navigable for boats. The estuary gradually increases from a breadth of 25 miles, till it opens out to the ocean, between Monte Video and Las Piedras, where it is 53 miles wide; the water is generally fresh, and its influence is felt 100 or 120 miles out at sea.

The ORINOCO rises in a mountainous region in the centre of Spanish Guiana, and flows with a very circuitous course through that province into the Atlantic Ocean, which it enters by a great number of mouths opposite the island of Trinidad. The current of the river, in the upper part of its course, is generally very rapid; and even at Angostura, 280 miles from its mouth, it runs with great rapidity, especially at the time of floods, when it is said to flow at the rate of eight miles an hour. The most southerly and widest of its deltaic branches, named the *Boca de Navios*, has a bar of 17 feet water, and the tide ascends to Angostura. In the upper part of its course the Orinoco sends off a branch, the *Cassiquiari*, which has a course of 150 miles, and joins the Rio Negro, an affluent of the Amazon, thus forming a navigable communication between the two great rivers.

The MAGDALENA rises near 2° N. lat. and flows northward through a long valley into the Caribbean Sea, near Santa Marta, after a course of 940 miles. Its principal affluents are the *Rio Cauca* from the left; the *Sogamoso* and the *Canaveralas*, from the right.

The *Rio Atrato* collects the waters of several mountain valleys to the eastward of the isthmus of Panama, and flows northward into the Gulf of Darien.

The *Guarapiche* falls into the Gulf of Paria. Its course is only about 100 miles, but it brings down a great body of water, and is navigable almost to its source.

The *Essequibo*, with its affluents the *Massaroony* and the *Cuyuwini*, the *Berbice*, *Demerara*, *Surinam*, *Marowine* or *Maroni*, and *Corentyn*, all flow into the Atlantic, in Guiana, between the mouths of the Orinoco and the Amazon; but, though generally navigable for some distance inland, they are comparatively unimportant.

The RIO DE SAN FRANCISCO rises from the northern declivity of the Sierra dos Vertentes, about 3000 feet above the level of the sea, near 20° S. lat., and flows in a north-easterly direction into the Atlantic Ocean, in 11° S. lat. It is navigable, without interruption, for about 230 miles from the sea; farther up, though still navigable to a considerable distance, the navigation is much interrupted by rapids and falls. It enters the sea by two mouths of unequal size, of which the northern and larger is about two miles wide; but has so little depth that only vessels of 60 tons burden can enter it at high-water.

In the country to the south-west of the Plata are several rivers, which do not reach the sea. The *Rio Dulce* (fresh water river) rises with several branches in the Andes of Despoblado, and flows in a direction nearly parallel to the course of the Rio Salado, an affluent of the Parana, for about 350 miles into the salt lake *Salagos de los Parangus*. The others are the *Rio Quarto*; the *Rio Quinto*; the *Desaguadero* of Lake Silvero; the *Rio Tunuyan*, named in the lower part of its course *Nuevo*, and after its junction with the *Diamante*, *Rio Salado*, and which terminates in a bitter lake named *Urre-lauquen*, after being joined by the *Chadi-Cubu*. The *Cobu-Leubu* rises from the southern side of the Descabezado peak in Chili, and flows in a south-east direction into the Atlantic, in 39° 50' S lat. The *Cusa-Leubu* or *Rio Negro*, is formed by the union of the *Neuquen* or Rapid River and the *Lemay Leubu* or *Rio de la Encarnacion*, which flows from the lake of *Nahuelhuapi*, in 72° W. long., and 39° S. lat. The united stream flows eastward into the Atlantic, near the north-eastern shore of the gulf of St. Matias. The *Rio de Santa Cruz* flows from the Lake *Capar* or *Viedma*, and after being joined by the *Chalia* and the *Chico*, forms the harbour of Santa Cruz, in the Atlantic Ocean, opposite the Falkland Islands.

The rivers on the west coast having very short courses, are unimportant. The principal of them, proceeding northwards, are: the *Penon*, *San Luis*, *Otomo*, which drains the large lake of Huenauca; *Tolten*, *Cauten* or *Imperial*, *Biobio*, at Concepcion; *Itata*, *Maule*, *Rapel*, *Maypu*, *Aconcagua*, *Quilimari*, *Huantilauque*, *Limari*, *Coquimbo*, *Huasco*, *Copiapo*; all in Chili.

LAKES.—North America is pre-eminently the country of lakes, and exhibits masses of fresh water, unequalled in any other part of the world. The lakes of Canada are the most remarkable as well for their extent as for their utility as channels of navigation; and form just so many large inland seas. *Lake Superior*, measured on a curve line passing through its centre, has a length of 420 miles, an extreme breadth of 165, and a circuit of about 1750, following the windings of the coast. Its surface is 623 feet above the level of the sea; but as its depth varies from 500 to 900 feet, and is even supposed to be in some places 1200 feet, its bottom lies far below the level of the ocean. The area of the lake contains about 40,000 square miles; that of the basin which it drains by means of 220 rivers and brooks, amounts to 140,000. Some of these rivers are considerable streams, and, though the sources of not of them are more than 50 or 70 miles from the lake, yet their winding channels are often double that length. Their sources are in general 500 or 600 feet above the surface of the lake, and their currents are much broken by rapids and falls. There is no regular rise and fall of the waters of the lake, but the continued prevalence of a heavy gale from a particular quarter sometimes raises them several feet, and the surface is perceptibly higher during the spring freshes after a severe winter. The water is very pure and cold; the bottom consists of an adhesive clay. The northern shore consists of lofty rocks, from 300 to 1500 feet high, and is lined with numerous islands which afford shelter for vessels. The southern coast consists chiefly of low, sandy beaches, interrupted by limestone cliffs, and destitute of sheltered bays. The only islands, except those on the coasts, are those of *Michipicoten* or *Maurepas*, and the *Caribou Islands* in the eastern portion, belonging to Britain, and *Isle Royale* in the western part, which belongs to the United States.

LAKE HURON receives the surplus waters of Lake Superior through the river St. Mary, which is about 30 miles in length, with a fall of 50 feet, 22½ of which occur at the Sault or Rapids of St. Mary, extending over a space of two miles. The greatest length of the Lake Huron from the mouth of the St. Mary to the outlet of its waters, is 250 miles; its greatest breadth in the northern part, is 220, but in the southern part it is much less; its circuit is about 1200 miles; its area, 25,000 square miles; its surface, 595 feet above that of the ocean; and its depth about 450 feet. The shores on the west and south-east are low, and little broken, forming long regular curvatures; while in the north-east and north they are high and indented. The long chain of the *Manitoulin islands*, which stretches from the mouth of the St. Mary to within 10 miles of Cabot's head, has the same geological character, and exhibits the same broken appearance as the northern coast. These islands almost completely divide the great expanse called the *Georgian Bay*, from the body of the lake. On the west side of the lake is a large inlet named *Saginaw Bay*.

LAKE MICHIGAN lies on the same level with Lake Huron, and is, indeed, properly a part of it, the two lakes being connected by the *Strait of Michilimackinac* or *Mackinaw*, which is four miles wide at the narrowest part. The form of the lake is elliptical, and in general quite regular, the coasts extending in long uninterrupted sweeps. The length is about 300 miles, the breadth from 80 to 90; the area 25,000 square miles; and the greatest depth about 900 feet. *Green Bay*, on the west side, is nearly detached from the body of the lake by a long peninsula and several islands. The shores are generally low, and their regular conformation almost deprives the lake of natural harbours. The outlet of lake Huron is called the *River of St. Clair*; which, after a course of about 30 miles, expands into a shallow lake of the same name, about 100 miles in circumference. The outlet of this lake is the river *Detroit*,

miles in length, which falls into lake Erie. These two rivers with the intervening lake are navigable for vessels of 7 or 8 feet draught; their banks are low and level.

LAKE ERIE is 265 miles long by 63 in breadth at the middle; its surface is 565 feet above the level of the sea, forming an area of 11,000 square miles; but its depth does not much exceed 100 feet. The shores are low, the northern consisting of sandy beaches and clay banks; and the southern, chiefly of shingle beaches or sand-banks, interrupted by rocky cliffs. Towards the west there are extensive marshes on both sides. The want of sheltered bays on both coasts has rendered it necessary to resort to pier harbours; the mouths of the rivers are also obstructed by sand-bars. The islands, 26 in number, are all in the south-western portion of the lake. The largest are *Pelee*, belonging to Canada, and *Cunningham*, to the United States. The *Bass Islands*, a group of small islands, valuable for the shelter and anchorage which they afford, are within the American limits. The winds are generally up or down the lake, and in summer blow up for two-thirds of the season. Violent and dangerous gales prevail in autumn and winter, and the lake is usually covered with floating ice till May. The river *Niagara*, 33 miles in length, forms the outlet of Lake Erie, and has a descent of 334 feet to Lake Ontario. Of these, 165 form one perpendicular fall, and 51, the descent of the Rapids in the half mile immediately above the falls. Below the falls the Niagara flows through a deep rock-bound chasm, the sides of which are formed by mural precipices, nearly 300 feet high, as far as Queenstown, where the ground sinks down almost to the level of the river. The great fall, 20 miles from Lake Erie, is divided by Goat Island into two portions, one of which, named the Horse-shoe fall, from its semicircular form, has a lineal extent of 600 yards, on the Canadian side; the other, an extent of 300 yards, on the American side. For grandeur and sublimity, the *Falls of Niagara*, are hardly equalled, certainly not surpassed by any other natural scene in the world. President Dwight of Newhaven estimates the quantity of water precipitated over the Falls at 11,299,375 tons an hour; Darby, at 1,672,704,000 cubic feet, per hour; and Picken, at 113,510,000 gallons, or 18,524,000 cubic feet, a minute. The river contains several islands, one of which, named *Grand Isle*, contains 18,000 acres of rich fertile soil covered with forests; and another, *Navy Island*, which acquired some notoriety in the late Canadian insurrection. Grand Isle is on the American, Navy Isle on the Canadian side.

LAKE ONTARIO is about 200 miles in length; its greatest breadth is 60; its circuit, 470; its area, 10,000 square miles; its surface, 231 feet above the level of the sea; its depth from 300 to 600 feet. The shores are generally low; but, between Toronto and the Bay of Quinte they are higher. The lake has but few natural harbours; those of Toronto and Kingston on the north, and Sackett's harbour on the south-east, alone are good. There are about 20 small islands in the eastern part of the lake. Its great depth renders it less liable than Lake Erie to be obstructed by ice. It emits its surplus waters by the river Kataraqui, and the *Lake of the Thousand Islands*, which afterwards become the St. Lawrence.

The other principal lakes of Canada are: *St. John's*, north of Quebec; *Nipissing*, *Missisagua*, *Muskoka*, *Trading*, *Simcoe*, *Cameron's*, *Sturgeon*, *Pigeon*, *Shemong*, *Trout*, *Rice*, *Rideau*, *Mississippi*, in Upper Canada. The British territory to the north-west of Canada, contains a great many other lakes, of which it may be sufficient to mention the names and dimensions of the principal, viz. The *Lake of the Woods*, west of Lake Superior; *Winnipeg*, 280 miles long, breadth varying from 15 to 80; area, 9000 square miles; *Winnepegoos* or Little Winnepeg; *Athabasca*, 3000 square miles; *Great Slave Lake*, 12,000 square miles; *Great Bear Lake*, 8000 square miles; *Wollaston Lake*; *Deer Lake*; *Big Like*; *Abbitibbi* and *Misstassin*, to the south and south-east of James' Bay.

In the United States: *Lake Champlain*, between New York and Vermont, 120 miles in length, from 1 to 15 in breadth; area 500 square miles; 90 feet above the level of the sea. It is deep enough for the largest vessels, but is commonly navigated by ships of 70 or 80 tons, which can get access to the rivers and canals. It contains more than 50 islands, and the aspect of its shores is varied and pleasant. It is connected with the Hudson river by a canal, and discharges its surplus waters by the Richelieu, which flows to the St. Lawrence. *Lake George*, 36 miles long, and from three-quarters of a mile to 4 miles broad, studded with several hundred islands, is remarkable for the purity of its water and the beauty of its scenery, and has an outlet 3 miles long, with a rapid descent of 200 feet down to Lake Champlain. Along the south side of Lake Ontario, within from 20 to 60 miles, are the Lakes *Oneida*, *Otsego*, *Skaneateles*, *Owasca*, *Cayuga*, *Seneca*, *Crooked*, *Canandaigua*, *Honeoaye*, *Hemlock*, and *Canesus*; all in New York. Cayuga and Seneca are the principal, the former being 36 miles in length, and the latter 35; but both very narrow. In the western part of the same state is Lake *Chateauque*, a small but deep and navigable body of water, 1300 feet above the level of the sea. It has been estimated that one-sixth part of the surface of the State of Maine consists of water; and, indeed, the lakes are so numerous as to form one of the characteristic features of the country. Some of them are remarkable for the picturesque beauties of their scenery, and many of them will be useful channels of communication when the neighbourhood becomes more densely inhabited. In the north are the *Temiscouta*, the *Baamchenungamock*, and the *Pongokwahem*; in the centre are *Moosehead Lake*, 50 miles long, but of very irregular breadth, *Chesuncook*, 20 miles long, and *Pemadumcook*. The *Moosetegmaguntic* and the *Umbagog* are on the western frontier, and the *Schoodic* and *Upper Schoodic* on the eastern. In New Hampshire are a great many small lakes; the largest and most important of which is *Winnipiseogee*, a picturesque sheet of water of very irregular form; 22 miles in length, and from 2 to 10 in breadth. About 300 pretty islands are scattered over it, and its shores are indented by beautiful bays, formed by gentle swells of land rising gracefully from the water. The lake abounds in fish; and is navigated by steam vessels. Lake *Memphramagog*, partly in Vermont and partly in Canada, is 40 miles in length by 2 or 3 in width, and surrounded by a tract of fertile level country. Novaculite or oil stone is found on an island of the lake, and sold under the name of Magog oilstone. The lake discharges its waters by the river St. Francis, which falls into the St. Lawrence 40 miles above Quebec. In Louisiana are the great lakes of *Pontchartrain*, *Borgne*, *Ouacha*, *Grand*, and others, formed by the waters of the Mississippi; *Bodeau*, *Cado*, *Bistinoe*, *Cannimia*, *Bayou-Pierre*, *Spanish*, *Black*, and others, formed by the Red River and its branches. In Wisconsin is Lake *Winnebago*, formed by the Fox river, which falls into Green Bay in Lake Michigan; the *Four Lakes*, in Dane county; *Kushkanong*, in Jefferson county, and *Geneva*, in Walworth county; *Red Lake*, near Red River, in the northern part of the territory.

The TULE LAKES, in California, extend in the direction of the coast, from south-east to north-west for about 200 miles; they are said to be fordable at several places, in the dry season; and, during a considerable part of the year, very little, if any, water runs into the bay of St. Francisco, which receives the river that issues from their north-western extremity. The four lakes of *Zumpango*, *Christoval*, *Tezcuco*, and *Chalco*, are small bodies of water in the elevated plain of Mexico; but the largest lake in the country is that of *Chapala*, in the plain of Xalisco, which is traversed by the river Santiago. It is about 90 miles long, and from 12 to 18 wide. *Ilza* lake in Guatemala, about north lat. 16° 8', and west long. 91° 16', is 30 miles long by 6 broad, containing 11 islets, and surrounded with lands fertile in the extreme. *Golfo Dolce*, also in Guatemala, 28 miles long by 12 broad.

The LAKE of NICARAGUA, in Central America, between 10° and 12° N. lat., and 84° and 86° W. long., is 120 miles long, and 40 in breadth. At a little distance from the shore it is from 6 to 20 fathoms deep, and in some places more: it contains several islands, chiefly of volcanic formation; the most remarkable of which is Ometepe, not far from the south-west shore, which contains a lofty volcano. The surface of the lake is 134 feet above the level of the sea. It discharges part of its waters by the river Tepitapa, into the *Lake of Managua*, which is 45 miles long, and 15 wide, and deep enough

for large vessels, but has no outlet. The greater part, however, of the waters of Nicaragua flow to the Caribbean Sea, by the Rio de San Juan, which is about 120 miles in length. Both the lake and the San Juan are navigated by small river barges of about two tons burden.

The LAKE OF MARACAYBO, near the northern coast of South America, is 120 miles in length by 80 in breadth. It receives the waters of nearly 100 rivers, and communicates with the Gulf of Maracaybo by a channel 12 miles long, and 3 miles wide where narrowest. A bar runs across the entrance, with only 10 or 12 feet water. The lake has a considerable depth, except towards the shores; the water is fresh, except during strong northern breezes, when it becomes brackish towards the northern end.

The LAKE OF TITICACA, in Upper Peru, occupies the lower portion of an elevated valley, about 13,000 feet above the level of the sea, and extends about 300 miles in length, by from 30 to 60 in width. The lake covers a surface of about 4000 square miles; and from its southern extremity issues a stream called the Rio Desaguadero, which flows south-south-east, with a gentle current along the valley, and is lost in swamps and lakes near 19° S. lat. The surface of the lake, according to Mr. Pentland, is 12,795 feet above the level of the sea.

The Lake of *Xarayes* is only an immense swampy plain, along the river Paraguay, between 15° and 20° S. lat., reaching in some places 100 miles in breadth from the river. It is overflowed for about six months during the rainy season. A considerable portion of it is covered with a kind of wild rice, on which innumerable flocks of water-fowl, especially geese, feed. To the westward are a number of lakes called the *lagunas* in the country of the Chiquitos, which are also supposed to derive their waters from the overflowing of the Paraguay. The lake or lagoon of *Ybera* is a similar swamp, extending in width about 30 leagues parallel to the course of the Parana, to the eastward of Corrientes. Spreading far and wide to the south it occupies an area of about 1000 square miles, and supplies four considerable rivers. Its surface is covered with a prodigious quantity of aquatic plants and shrubs. The celebrated lake of *Parima*, in Guiana, is represented by the small lake of *Amucu*, only about three miles in length, and almost covered with rushes; but expanding, in the rainy season, to an inland sea.

The *Lagunas de Guanacache*, a singular chain of lakes, formed by the confluence of the rivers of Mendoza and San Juan, which form the drains of the eastern side of the Andes, between 58° and 34° S. lat. The Guanacache emits its waters by the river Tres Cruces, which carries them to *Lake Bilcero*, from which they are again carried by the Desaguadero into a vast lake named the *Beredero*, below the town of San Louis, in 34° S. lat. This lake also receives a portion of the waters of the river Tunuyan, the greater part of which, however, now flow by a new channel called the Rio Nuevo into the Rio Diamante. The last named river flows from the Andes, and, after being joined by the Rio Nuevo and the Chadi-Cubu or Salt River, terminates in a great inland lake, without outlet, called the *Urre-lauquen*, or Bitter Lake, from its extreme saltness. This lake is situated about 35° S. lat., and 65° W. long.

GEOLOGY.—The geology of the South American mountains, particularly of the Andes, is distinguished, like their physical form and arrangement, by some remarkable peculiarities. The first and most peculiar feature of this chain is, that it contains at least 30 active volcanoes, irregularly distributed along the line from the one extremity to the other; but chiefly in Chili and Equador. Some of them only emit smoke; others throw out mud and water; only a few produce lava. The second peculiarity in their structure is closely connected with the first: it is the prodigious space occupied by the basalts, porphyries, and trachytes, that is, by rocks of igneous origin. The base of the chain consists of granite, which may be conceived as forming a long elevation of from 5000 to 10,000 feet. Overlying that are beds of gneiss, mica slate, clay slate, and greywacké; but they are seldom all together, and probably in most places rest on the sides of the granite, without covering its summit. Above these, sometimes in beds, but more frequently in amorphous masses rest immense deposits, first, of an old porphyry, next, of a newer porphyry rich in metals, then of basalt, clinkstone, and amygdaloids, with masses of trachyte and syenite interspersed. This order, however, must not be understood as uniform or perfectly determined. These volcanic rocks, which occupy a trifling space in Europe, and never occur at great elevations, form almost every where the summits of the Andes, and exhibit in some places the enormous thickness of 10,000 or 12,000 feet; constituting probably one-third of the bulk of the whole chain. On the flanks of the Andes are found vast beds of sandstone and coal, of limestone containing fossil shells, and of other secondary formations up to the green sand. Shells and coal have been found at the height of 14,000 feet, and gypsum and rock-salt occur at various elevations. The third peculiarity of the chain, is the abundance of its mineral treasures, which include extremely rich veins of gold, silver, copper, and most of the other metals. The Andes are also distinguished by having their sides invested with a thick coat of clay, in which deep gullies have been worn by the streams. The great diffusion of internal fire throughout the chain, the newness of some of the strata, the frequency of earthquakes, and the recent elevation of part of the western margin in Chili, to the height of three or four feet above its former level, have led geologists to infer that the Andes, though surpassing most other mountains in elevation, are among the last which have been raised from the bottom of the ocean.

The transverse chain of the coast of Caraccas consists partly of primitive, and partly of secondary formations. The cordillera of Parimé, so far as hitherto examined, is wholly composed of primitive rocks, as granite, gneiss, mica slate, and hornblende; the cordillera of Chiquito, which separates the basins of the Plata and the Amazon, is only known at its eastern extremity, where it joins the mountains of Brazil. These last consist of a great number of ridges generally running north and south. Granite abounds in those nearest the Atlantic; but the prevailing rock

every where else, as far westward as the mountains of Cujaba, 55° W. long., is a quartzy mica slate, intermixed with granite, gneiss, and quartz rock, with portions of secondary sandstone resting on its sides, or in its valleys. This quartzy mica-slate, in Brazil, is the matrix of the gold and diamonds; the former of which is generally accompanied by platinum and iron. The direction of the strata approaches to north-east and south-west, and the dip, where it has been observed, is from 50° to 70° S.E. These mountains, like the Andes, are in many parts covered with a bed of clay. The rocks of the great plains have been but partially examined. Humboldt thinks that the northern *llanos* of Caraccas are of old red sandstone. Marls and clays, apparently of the tertiary class, were found by Mr. Caldcleugh in the *pampas* of Buenos Ayres; and, since deposits of rock salt exist on the east side of the Andes, it is probable that the whole plain of the Plata is occupied by secondary and tertiary formations.

In North America the Alleghany mountains present their scarp or steepest side to the east, where granite, gneiss, and other primitive rocks are seen. Upon these lie, first, a thin formation of transition rocks dipping to the westward; and, next, a series of secondary rocks, including a very extensive coal formation, which reaches from Pittsburg to far beyond the Mississippi. The Ozark mountains exhibit similar strata in the same order and position; and therefore probably consist of a western portion of the same beds raised to the surface by a slip or dislocation. In the rocky mountains, primitive rocks are found in the centre or axis of the chain, with old red sandstone, coal, and new red sandstone, containing rock salt, leaning against its sides. A great tract to the eastward of this chain is covered by granitic sands, and, near the bed of the Mississipi, there is a deep formation of alluvium. The Mexican table-land consists chiefly of transition slaty rocks, intermixed with which are two species of limestone, and enormous masses of porphyry, trachyte, syenite, phonolite, basalt, volcanic tuff, and other rocks of igneous origin. The veins of silver and gold are found chiefly in the older porphyry, the granular limestone, the syenite, and the transition slates.

TABLE OF THE MINERALOGICAL PRODUCTIONS OF AMERICA.

DIAMONDS.—Brazil, *Minas-Geraes*, &c.

OTHER PRECIOUS STONES.—Brazil, *Minas-Geraes*, &c.; Colombia, *Cundinamarca*; Chili; Peru.

GOLD.—Colombia, *Andageda, Atrato, San Juan, Cauca, Choco*, &c.; Brazil, *Minas-Geraes, Goyaz*, and *Mattogrosso*; Mexico, *Pinieria-alta in Sonora* and *Sinaloa*; Chili; Peru; Bolivia; United States of North America, *Anson County, North Carolina, Davidson County, South Carolina*; Central America.

SILVER.—Mexico, *Guanaruato, San Louis Potosi, Zacatecas*, &c.; Bolivia; Chili; La Plata, *Mendoza*; Central America.

TIN.—Peru; Mexico.

MERCURY.—Peru; Mexico.

COPPER.—Chili; Peru; Mexico; United States, *New York, Indiana*, &c.

LEAD.—United States, *Galena, in Illinois, Washington County, Missouri, New York*, &c.; Mexico.

IRON.—United States, *New Jersey, Pennsylvania, Massachusetts, Connecticut, South Carolina, New York, Maryland*; Mexico; Brazil, *St. Paul, Minas-Geraes*, &c.; Canada, *Mines of St. Maurice*; Colombia; Central America.

COAL.—Cape Breton; Nova Scotia; United States, *Pennsyloania*, &c.; Chili, *Penco*.

SALT.—La Plata; Brazil, *Rio Grande do Norte, Para*, &c.; United States, *Onondaga County, New York, Barnstaple County, Massachusetts, Kentucky, Gallatin County, Illinois, Missouri*, &c.; Central America *Honduras*, &c.; Colombia, *Zipaquira*, &c.; Mexico, *Oaxaca, New California*; Peru; Bolivia, *Yocalla, Chiquitos*; Bahamas, St. Kitts, and others of the Antilles.

CLIMATE. — The latitude of the country and the elevation of the land in both divisions of the continent, its position in reference to the sea, and the direction of the prevailing winds, are the chief circumstances which determine the nature of the climate. We have already stated that three-fourths of South America lie within the tropics, and the remaining fourth in the temperate zone; but, in both of these divisions, it might be naturally inferred, that a huge wall like the Andes, rising into the atmosphere to the height of two or three miles, and stretching across the course of the tropical and extra-tropical winds, would exert a powerful influence on the temperature, humidity, and the distribution of the seasons. This is actually the case; and it is this vast chain of mountains, with its prolongation in North America, which affords a key to the most remarkable peculiarities in the climate of the whole continent. The subject, we think, has not been hitherto well understood, though it admits of being explained in a very simple manner.

The trade-winds, which blow from the east, occupy a zone 60° in breadth, extending from 30° S. to 30° N. lat. Beyond these limits the winds are variable; but the prevailing direction of their course in the open sea, where no accidental causes operate, is well known by navigators to be from the west. Now these winds are the agents which transport the equable temperature of the ocean, and the moisture exhaled from its surface, to the interior of the great continents, where it is precipitated in the form of

rain, dew, or snow. Mountains attract the moisture which floats in the
they obstruct also the aerial current, and, presenting great inequalities of
favour precipitation. Rain, accordingly, in all countries, falls most abund
elevated land. Let us consider, then, what will be the effect of a mural r
Andes in the situation which it occupies. In the region within the 30th
moisture collected by the trade-winds from the Atlantic will be precipit
on the mountains of Brazil, which are but low, and are so distributed as
into the interior. The portion which remains will be borne westward,
little as it proceeds, will be arrested by the Andes, and fall down in sho
summits. The aerial current will now be deprived of all the humidity
separated from it, and will arrive in a state of complete exsiccation at Pe
rain will consequently fall. That even a much lower ridge than the And
cept the whole moisture of the atmosphere, is proved by a well-known
in India, where the Ghauts, a chain only 3000 or 4000 feet high, divide
winter, as it is said; that is, copious rains fall on their windward side,
other the weather remains clear and dry; and the rains regularly chan
west side to the east, and *vice versa*, with the monsoons. In the regio
30th parallel, this effect will be reversed. The Andes will in this ca
screen to intercept the moisture brought by the prevailing west winds fro
Ocean; rains will be copious on their summits, and in Chili on their w
vities, while none will fall on the plains to the eastward, except occasional
winds blow from the Atlantic. The phenomena of the weather correspond
able manner with this hypothesis. On the shores of the Pacific, from C
the 30th parallel, to Amotape, at the 5th of S. lat., no rain falls; and the
is consequently a sandy desert, with the exception of the narrow strips of
the streams that descend from the Andes, where the soil is rendered p
irrigation. From the 30th parallel southward the scene changes. Rains a
vegetation appears on the surface, and becomes more vigorous as we ad
ward. "At Concepcion," says Captain Hall, "the eye was delighted wit
and most luxuriant foliage; at Valparaiso the hills were poorly clad wi
brushwood and a poor attempt at grass, the ground looking starved and n
quimbo the brushwood was gone, with nothing in its place but a vile so
pear bush, and a thin sprinkling of grey wiry grass; at Guasca (lat. 28
not a trace of vegetation, and the hills were covered with bare sand."
from the principle we have laid down, that in this southern part of the c
dry tract should be found on the east side of the mountains, and such
At Mendoza, in lat. 30°, rain scarcely ever falls; and the district along
base of the Andes is known to consist chiefly of parched sands, on which a
shrubs grow, and in which many of the streams that descend from the m
absorbed before they reach the sea. The whole country, indeed, south o
suffers from drought; but on the eastern side this evil is remedied to som
winds from the east or south-east, which bring occasional rains to refresh th
Amotape northward, on the other hand, the west coast is well watered
and this change is easily accounted for. The line of the coast here changes
and trends to the north-east as far as the Isthmus of Panama, where th
sink to a few hundred feet in height, and leave a free passage to the trade-
here often assumes a direction from the north-east, or even the north.
tions of the Atlantic are thus brought in abundance to the coast of Quit
in consequence well watered; while the neighbouring district of Peru
perpetual aridity.

Our principle applies equally to the explanation of some peculiar facts
with the climate of North America. The western coast of Mexico, as far
or Mazatlan, in lat. 23°, is well watered, because *first*, the continent here
secondly, the table-land of Mexico, which is much lower than the Andes
not so effectual a screen to intercept the moisture; and, *thirdly*, there is
believe that a branch of the trade-wind, which crosses the low part of th
at Panama and Nicaragua, sweeps along the west coast during part of the
transports humidity with it. But beyond the point we have mentioned d
vails. Sonora, though visited occasionally by rains, consists of sandy plai
of herbage, where the streams lose themselves in the parched soil witho
the sea; and even Old California, which has the ocean on one side, and a
on the other, and ought apparently to be excessively humid, is covered
rocks and sandy hills, where the vegetation is scanty, and where no timber
cept brushwood. This dry region extends as far as 33° or 34°; but immedia

this we have another change of scene. New California is described as in all respects a contrast to the Old. It is rich, fertile, and humid, abounding in luxuriant forests and fine pastures; and the American possessions to the northward preserve the same character. How can we account for this singular diversity of climate, except on the principle which has been explained, namely, that in all regions where ranges of mountains intersect the course of the constant or predominant winds, the country on the windward side of the mountains will be moist, and that on the leeward dry; and hence parched deserts will generally be found on the west side of countries within the tropics, and on the east side of those beyond them? Our hypothesis applies equally to the country east of the Rocky Mountains. For the space of about 300 miles from the base of this chain, the surface of the country consists of dry sands or gravel, sometimes covered with saline incrustations, nearly destitute of trees and herbage, and watered by streams flowing from the mountains, which are sometimes entirely absorbed by the arid soil. The central and eastern part of the basin of the Mississippi would in all probability have been equally barren had the configuration of the land been a little different in the south. A tract of country extremely low and level extends along both sides of this river; and a portion of the trade-winds, which blow from the Mexican Gulf, finding its motion westward obstructed by the high table-land of the Cordillera, is deflected to the right, and ascends the valley of the Mississippi and Ohio. This wind, whose course was first traced by Volney, bears with it the humidity of the torrid zone, and diffuses fertility over a wide region which would otherwise be the abode of barrenness.

Great misapprehensions have arisen respecting the climate of America, from comparisons being drawn between the east side of the new continent and the west side of the old. We have already pointed out the influence of sea-winds in modifying the state of the atmosphere over the land, both as to heat and humidity. When this circumstance is attended to, and when the east and west sides of the old and the new continents are respectively compared with each other, the difference is found to be small, and easily accounted for. In the torrid zone, and on the sea-shore, the temperature of both continents is found to be the same, viz. 82°; but in the interior the difference is rather in favour of America. There is no counterpart in the new world to the burning heats which are felt in the plains of Arabia and Gedrosia. Even in the western and warmest portion of the parched plains of Caraccas, the hottest known region in America, the temperature of the atmosphere during the day is only 98° in the shade, while it rises to 112° in the sandy deserts which surround the Red Sea. At Calabozzo, farther east in the plains, the usual temperature of the day is only from 88° to 90°; and at sunrise the thermometer sinks to 80°. The basin of the Amazon is shaded with lofty woods; and a cool breeze from the east, a minute branch of the trade-wind, ascends the channel of the stream, following all its windings, almost to the foot of the Andes. Hence this region, though lying under the equator, and visited by almost constant rains, is neither excessively hot nor unhealthy. Brazil, and the vast country which extends westward from it between the Plata and the Amazon, is an uneven table-land, possessing an equable climate. At Rio Janeiro, which lies low, and is exposed to a heat comparatively great, the temperature in summer varies from 16° to 22° of Reaumur, and the mean heat is only about 19° (74° Fahrenheit.) Farther north, and in the interior, the Indians find it necessary to keep fires in their huts; and in the country near the sources of the Paraguay, hoar-frost is seen on the hills during the colder months, while the mean temperature of the year falls below 65° or 67°. On the declivities of the Andes, and on the high plains of Upper Peru, the heats are so moderate that the plants of Italy, France, and Germany, come to maturity. Lower Peru, though a sandy desert, enjoys a wonderful degree of coolness, owing to the fogs which intercept the solar rays. At Lima, which is 540 feet above the sea, the temperature varies from 53° to 82°, while the average for the whole year is only 72°. In the plains of La Plata, the mean temperature of the year is very nearly the same as at the corresponding north latitudes on the east side of the Atlantic. At Buenos Ayres, for instance, the mean annual heat is 19° 7′ of the centigrade thermometer (68° Fahrenheit), while that of places on the same parallel in the old world is 19° 8′. The range of temperature is probably greater in the basin of the Plata; but as we advance southward, the diminishing breadth of the continent makes the climate approximate to that of an island, and the extremes of course approach each other. In the Straits of Magellan the temperature of the warmest month does not exceed 43° or 46°; and snow falls almost daily in the middle of summer, though the latitude corresponds with that of England. But the inference drawn from this, that the climate is unequalled for severity, is by no mea[illegible]

just, for the winter at Staten Island is milder than in London. In point of fact, climate of Patagonia is absolutely colder than that of places in the same latitud Europe; but the difference lies chiefly in the very low temperature of the sum This peculiarity no doubt arises chiefly from the greater coldness of the sea in southern hemisphere; for beyond the parallel of 48° the difference of temperatu the North and South Atlantic amounts, according to Humboldt, to 10° or 1 Fahrenheit's scale. If we push our researches a step farther, and inquire what is cause of the greater warmth of the northern ocean, we shall be forced to admit th satisfactory reason cannot be given. Something may be due to the influence of gulf stream, a minute branch of which is supposed to carry the waters of the rid zone to the shores of Shetland and Norway; but so feeble an agent seems trifling to account for the phenomenon. The sum, then, of the peculiar qual which distinguish the climate of South America may be briefly stated. Near equator the new continent is perhaps more humid than the old; and within the pies generally, owing to its vast forests, the absence of sandy deserts, and the el tion of the soil, it is cooler. Beyond the tropics the heat is nearly the same in southern temperate zone of America and the northern temperate zone of the old tinent, till we ascend to the neighbourhood of Cape Horn, where we have cold mers, and a very limited range of the thermometer in the western hemisphere.

As nine-tenths of North America lie under the temperate zone, the climate fol a different law from that which is observed in the southern peninsula, and pre more striking contrasts to that of the best known parts of the old world. The narrow region now denominated Central America, which connects the two great sions of the continent, stretching from Panama to Tehuantepec, has in general a humid atmosphere; but, for a tropical country, it must be only moderately ho every part of it is within a small distance of the sea. In Vera Paz rains fall du nine months of the year. Mexico is hot, moist, and unhealthy on the low co but two-thirds of its area, comprising all the populous districts, consist of t land, from 5000 to 9000 feet above the level of the sea. In consequence of singular configuration of its surface, Mexico, though chiefly within the torrid zone joys a temperate and equable climate. The mean heat at the capital, which is feet above the sea level, is 62½°, and the difference between the warmest and co months, which exceeds 30° at London, is here only about 12°; but the atmosp is deficient in moisture, and the country suffers from drought. Beyond the pa of 24°, the western shores are hot and arid

In the extensive region between the parallels of 30° and 50°, which compreh three-fourths of the useful soil of North America, there are three well-marked v ties of climate, those of the east coast, the west coast, and the basin of the M sippi. On the east coast, from Georgia to Lower Canada, the mean temperatu the year is lower than in Europe by 9° at the latitude of 40°, and by 12½° a latitude of 50°, according to Humboldt's calculation. Besides, the range o thermometer is greater than in Europe, the summer being much hotter and winter much colder. At Quebec the temperature of the warmest month exceeds of the coldest by no less than 60½ degrees of Fahrenheit; while at Paris, whi nearly under the same latitude, the difference is only 31°. The climate, more undergoes a more rapid change in America as we proceed from south to north, gree of latitude in the middle of the temperate zone producing a decrease of a temperature of 1·13 in Europe, and of 1·57 in America. The comparison is gr to the disadvantage of America when made in this form; but when the east c of the two continents are compared, the case is altered; the old world is fou have no superiority over the new, for Peking has still colder winters and wa summers than Philadelphia, which lies under the same latitude. It is the west of the new continent which ought to exhibit the climate of Europe; and from the facts known, we have reason to believe that it is quite as mild and equable. At mouth of Columbia River, in lat. 46½°, Captains Lewis and Clarke found the rain be copious and frequent; but they had very little frost, and saw no ice even in depth of winter. From observations made in 1822-3-4, it appears that the m heat of the warmest month was about 62°, that of the coldest about 36°, and of whole year 51°. Now, the latitude is the same as that of Quebec, where the s lies for five months, and the mean temperature during the three winter month 18° below the freezing point. This single circumstance marks emphatically the trast in the climate of the east and west coasts of North America. But the mo of Columbia River is also under the same parallel with Nantes at the mouth of Loire, where snow and ice are not unusual in the cold season of the year. We h

therefore, good grounds for concluding, that the west coast of America, in the middle latitudes, has fully as mild and equable a climate as the west coast of Europe. The climate of the great central valley, or basin of Mississippi, bears a considerable affinity to that of the east coast. It was long a matter of dispute in what the difference between the two consisted; but this seems at last to have been clearly settled, by the meteorological registers kept at the military posts of the United States. From a comparison of four of these registers, kept at posts near the centre of this great valley, with others kept on the Atlantic coast in the same latitudes, it appears that in the hottest month the temperature is from 5° to 6° higher, and in the coldest month as much lower, in the basin of the Mississippi, than on the coasts of New England. The proportion of fair to cloudy weather is as five to one in favour of the east coast. The climate of the interior, therefore, exhibits in still greater excess those extremes of temperature which distinguish the eastern coast of this continent from the western, and from the shores of Europe. The fourth region of extra-tropical America includes the regions beyond Mount St. Elias on the west coast, and, in the interior, the plains which extend from the 50th parallel to the Polar Seas. The intensity of the cold in this tract of country is scarcely equalled by any thing that is known under the same parallels in northern Asia. The most northerly spot in America where grain is raised, is at Lord Selkirk's colony, on Red River, in lat. 50°. Wheat, and also maize, which requires a high summer heat, are cultivated here. Barley would certainly grow as far north as Fort Chippewyan, in lat. 58¾°, where the heat of the four summer months was found by Captain Franklin to be 4° higher than at Edinburgh. There is even reason to believe, that this species of grain and also potatoes might thrive as far north as Slave Lake, since the spruce fir attains the height of 50 feet three degrees farther north, at Fort Franklin, in lat. 65°. These, however, are low and sheltered spots; but in this dreary waste generally, it will not be found practicable, we suspect, to carry the arts of civilized life beyond the 60th parallel; and the desirable country, capable of supporting a dense population, and meriting the name of temperate, can scarcely be said to extend beyond the 50th parallel. At 65° snow covers the ground in winter to the depth of only two feet, but small lakes continue frozen for eight months. The sea is open only for a few weeks, fogs darken the surface, and the thermometer in February descended, in one instance, to *minus* 58°, or 90° below the freezing point. At Melville Island, under the 75th parallel, such is the frightful rigour of the climate, that the temperature of the year falls 1° or 2° below the zero of Fahrenheit's scale. It is a peculiarity in the climate of America, that beyond the parallel of 50° or 52°, it seems to become suddenly severe at both extremities. At the one, summer disappears from the circle of the seasons; at the other, winter is armed with double terrors.—(*Ency. Brit. Article* AMERICA, pp. 611-613.)

VEGETABLE PRODUCTIONS.—The vegetable kingdom in America presents greater diversity than that of any region in the old world, of corresponding climate; and this remark becomes more true as we make a nearer approach to the equatorial zone. Although we are far from being fully acquainted with the flora of America, we may nevertheless affirm that it is richer than that of any other part of the world. More than 15,000 species of phanerogamous plants grow there spontaneously; but we must confine our attention specially to those which, differing in their structure from the plants of other continents, are the peculiar product of the western continent.

The low countries which border the Polar Sea and Hudson's Bay, produce plants resembling those of the High Alps in Europe; and the flora of this region of America is nearly identical with that of Lapland. A few stunted willows, birches, poplars, and pines, are the only trees which can resist the cold. A considerable number, however, of herbaceous plants are remarkable for the large size of their flowers, considering the shortness of their duration; and the rigour of the climate is no obstacle to the development of cryptogamous plants. Mosses and lichens cover the ground of this arctic country, and seem almost to exclude every other vegetable.

Canada and the basin of the St. Lawrence exhibit the transition from the frozen to the temperate zone of America. In Newfoundland are already found the plants of the United States, though the northern flora still predominates. Farther south, species multiply, and are remarkable for their beauty, which is much greater than that of any plants produced in the Old World, in the same latitudes, or in climates of the same temperature. And even among the plants of European species there is greater diversity and elegance in the green-wood trees which decorate the forests of North America. A crowd of plants, produced only by cultivation in Europe, grow naturally in the United States, where the mixture of northern and tropical forms is

to be seen. Michaux has given descriptions of a number of species of native oa the timber of which is harder than the European *quercus robur*. The coniferous trees also exhibit forms extremely various; pines, firs, and junipers, are particularly those most numerous in species. The *myrica cerifera*, a shrub of the amentaceous family, is remarkable for the use which the Americans make of its fruit, the wax cover of which serves for making candles. Among the herbaceous plants which are interesting from their elegance, or the singularity of their organization, we may cite several species of lobelias; and the famous Venus' flytrap, which grows in the marshes with the *cabomba aquatica*, found equally in Guiana and Carolina. A number of European plants also, besides those introduced by culture, grow naturally in this part of America; as the *Linnæa borealis*, *gentiana pneumonanthe*, *saxifraga-aizoon*, and *octopetala*, &c. But these plants belong to the cold country, and contain the least varieties.

The plants of north-west America have a close relation to those of the United States, and of Siberia; and it is from this region that, of late years, a number of plants which now decorate European gardens have been brought.

If we now look to the southern parts of North America, we find a vegetation different from that of the regions already mentioned, namely that of the equatorial regions, modified by the elevation of the country. Thus, while the coasts of Mexico and the shores of the Antilles present the plants indigenous to the warmest regions of the globe, the mountains and high table-lands produce not only those which are related to the plants of temperate regions, but even several species of those which belong to the latitudes nearest the equator. The warm region rises from the level of the sea to about 1900 feet; its mean annual temperature is about 79° Fahrenheit; and the difference of temperature between the eastern and the western coasts of Mexico, and the shores and interior of the islands, is more dependent on their exposure to the prevailing winds, and their elevation, than on the difference of the latitudes. Among the plants peculiar to these warm regions are several palms, scitaginæ, legumes, labiatæ, rubiaceæ, and solaneæ. In the temperate region, the mean annual heat is about 78°; and many trees and frutescent plants are to be met with, particularly oaks. Above this rises the cold region of Mexico, exceeding 7000 feet above the level of the sea, and having an annual temperature varying between 33° and 64°. On the borders of the snow, which covers the tops of the mountains, are found plants indigenous to more northern climates. In the least elevated spots are a great number of plants of European genera, but differing in species. A tree, much admired by travellers, as well for the beauty of its form as for the singular organization of its flowers, grows near Toluca. It is the *cheirostemon platanoides* of Humboldt and Bonpland, named also by other botanists *cheiranthodendron*, names which correspond with its Spanish designation *arbol del manitas*, and convey an idea of the conformation of its stamina, which much resemble the five fingers of the human hand. There are whole forests of it to the north of Toluca.

All the low countries of the equatorial region of America, from Mexico to Brazil and Peru, are characterized by a peculiar vegetation; but we must content ourselves with mentioning the plants useful to man, and those which are so abundant in some countries as to determine their character and aspect. Palms, with the exception of the date-tree and some *chamærops*, grow in all the tropical climates; some grow even on the slopes of considerably elevated mountains, as the *ceroxylon andicola*, which has been met with in the mountains of Quindiu in Peru. The natives gather from its trunk a kind of wax fit for giving light. The other palms in great variety are common in the plains or the hills of all this part of America, principally in Colombia, Guiana, and Brazil, in the last of which they are particularly abundant, and very various. These regions present also to the European, when he first lands on their shores, an admirable prospect in their arborescent ferns, which grow with all the majesty of palms and pine trees. Numerous species of cyatheæ, feterides, aspides, doradilles, &c., form one of the characteristic traits of the flora of the Antilles, New Andalusia, New Granada, the valleys of Peru, and in Mexico, near Jalapa. We may also mention the numerous *cacti*, with stocks resembling vast chandeliers, on the coasts of Cumana, and particularly the cochineal cactus, so valuable to Mexico; the *araucaria* of Chili and Brazil, the cacao, the rocou, the dye-wood of Campeché, the banana, the ananas, &c., which are not only useful in their native countries, but have also become necessary to the arts and manufactures of Europe. Several useful plants have likewise been introduced and successfully cultivated in these countries, as the coffee-tree, sugar-cane, cotton-plant, bread-fruit-tree, &c. In Brazil are found ipecacuanha, cinchona, &c.; and the high mountains of that country present a still greater number of plants than

the plains; among which may be noticed the vellosia, a kind of amaryllis, of which the species are found congregated, and whose expanded branches are covered with blue, violet, or white flowers, as large as our lilies.

In the southern region of America, a vegetation analogous to that of Europe, is found in latitudes nearer the equator. Thus the neighbourhood of Monte Video is covered with plants, which, with few exceptions, belong to the same genera that compose the flora of France. To complete this sketch of the vegetable productions, we should now describe those of Chili, Peru, Buenos Ayres, Patagonia, and Tierra del Fuego; but with respect to Peru, we should only have to repeat much of what we have already stated concerning the vegetation of Mexico and Brazil; for countries which correspond in character and temperature produce plants, if not absolutely the same, at least very similar in their organization. Peru, however, and Colombia, are the native country of the febrifugous cinchona: it was a long time believed that the true cinchona, or Peruvian bark, grew only among the Andes, but M. Auguste de St. Hilaire has found in Brazil three species which rival in their medicinal virtues those of Peru. South America is also considered as the native country of two species of vegetables particularly useful to man, the potatoe and maize; but nowhere has the potatoe been met with in a wild state; though plants with tuberculous roots, of similar appearance, are abundant in different parts of Chili, particularly near Quillota. Maize seems to be indigenous to Paraguay.

Patagonia and the neighbouring islands are very little known; but their vegetation seems to be analogous to that of the north, though characterized by a very singular appearance.

America does not contain a single species of *erica* (heath), nor has a *pæonia* ever been found in it, except a solitary one observed by Douglas to the west of the Rocky Mountains. That mountain barrier indeed divides two classes of vegetation, almost as peculiar as those of two continents. On its eastern side the forests of North America are distinguished by the variety of their oaks and juglandes, the magnificent flowers of the rhododendron, the magnolia, the azalea, and the humbler beauties of the actea and raccinium; all of which are utterly unknown on the western side of the ridge. America is the real habitat of the cinchonaceæ and the cacti, of the fuchsia, the calathea, the mustisia, and all the bromeliaceæ.

ANIMALS.—In most parts of America many new genera are met with in every class of animals, distinct from those of the old world; and few species are found, which are not peculiar to it, with the exception of marine animals. The quadrumana, which range through 29° on each side of the equator, have the peculiarity of either wanting the thumb or the fore paw, or having it so placed, or so imperfectly developed, as not to be a real opponent to the fingers; while the prehensile tails of many, and the hairy buttocks of all, which shew that none of them sit erect, distinguish them from the individuals that most resemble them in the old world. The carnivora of America are almost all peculiar to it; with the exception indeed of some of the marine carnivora, and a very few terrestrial species, all are specifically distinct from those found in other parts of the world. The whole order of marsupiata is either American or Australian; and the species of the one country are unknown in the other. America exceeds every other country in the number of its rodentia; and there is reason to doubt whether any of this order are common to the two great divisions of the world. The edentata are found chiefly in South America, but all are peculiar to the new world. Though America appears to have been, at one time, rich in its pachydermata, as their fossil remains attest, yet at the period of its discovery there were not more than four or five species of this order found on the continent. They were all peculiar, and only one, the dicotyles torquatus or peccary, is common to the northern and southern divisions. Among ruminantia we consider the American rein-deer and elk as peculiar species; and the identity of the ovis montana of the Rocky mountains and the Argali of Siberia as very doubtful. The order of cetacea is probably common to both divisions of the world, with the exception of Cuvier's manatus americanus, which is found on the coast of Florida, and also on that of South America. Dr. Richardson reckons that, out of 207 species of mammifers found in North America, 169 are peculiar to that country; and, if we take Temminck's estimate of this class, North America contains one-fifth of all the known species of mammalia. The same author gives the number of American birds at 696 species, of which 54 are *raptores*, 400 *insessores*, 33 *rasores*, 87 *grallatores*, and 122 *natatores*. Except in the last two orders, the species common to the old and the new world are few, and a great many genera are wholly American. The alligator, the boa-constric-

teristic is the number of its rodentia, amounting to not less th
certained species, only one of which, the beaver, is found in the
are numerous, and among these the wild turkey is the most
racteristic. Of the raptores it contains many falcons and hav
Washington's eagle, a magnificent bird found in Kentucky. (
sores the greater part are peculiar to North America. The
birds) first appear in this region; of which it contains a considera
but only three extend so far north as 33°. They resemble in
enters of Australia: but Professor Traill doubts the propriety
rial; for, having dissected a considerable number of them, he
stomachs crammed with minute insects. The rasores of this re
single species of bustard, peculiar to America. Of the numer
siderable number also occur in Europe, and still more of the nata
mer order three species are peculiar to America, and of the latte
lucius abounds in the valley of the Mississippi; where very
syren lacertina of Carolina, and the *meopoma gigantea*, are also
representative in the old world, except the proteus anguineus
lakes of Carniola. Among the numerous tortoises we may noti
ferox, and the *clausa*. The serpents are numerous; the most rema
snakes, of which four or five species are found in this region.

Equinoctial America, or the region which extends from the
on each side, but exclusive of the elevated valleys and table-l
Bolivia, is distinguished by the number of its quadrumana, all o
with tails, and many of them have that organ prehensile, answer
fifth hand. It is also the region of the jaguar, a feline animal
courage. The puma likewise abounds, which, however, has far l
the lion of America than the jaguar has to be called the tiger of
puma has a considerably wider range than its congeners now me
in the woods of America from Brazil to Canada. This region al
tapir, the capybara, and the agouti. The rivers swarm with the
ders far from the sea, as well as a species of porpoise which is as
known. The region is also distinguished by the splendid plum
which numerous genera are either wholly peculiar to tropical Am
unrepresented in other regions. Its raptorial birds are often di
size. To this region belong the magnificent king-vulture, and a
cies of the same family, as large as a turkey, the *vultur uruba*;
harpy eagles, the giants of their tribe, are the tyrants of the lo

mourning snakes, are distinguished for the beauty or elegant pattern of their colours; others, like the rattlesnake or the bushmaster, are dreaded for the virulence of their poison. The fluviatile fishes of the region are remarkable; but we can only notice here the electric gymnote, the soldier loricaria, and the salmo rhombeus; the last of which is the pest of the South American rivers. The *papilionidæ* and *phalænidæ*, among its insects, are noted for their size and the splendour of their colours; and the singular lantern-fly for the brilliancy of its light. The wounds inflicted by the large bird-catching spider, the biting scolopendra, which grow to an enormous size, and by a small species of scorpion, are much dreaded.

The animal productions of the Mexican region, though but imperfectly explored, would seem to justify the inference drawn from its peculiarity of climate that this portion of America should be considered as a distinct zoological kingdom. It has been recognised as the point in which the fauna of North and South America meet. There the wolf of the north and the monkey of the tropics range the same forests; the bunting and the titmouse nestle near the parrot and the trogon; the phalaropé of the north searches for its food on the same beach with the jacana and the boatbill of Brazil. Lichtenstein has pointed out several species of weasels and martins as peculiar to Mexico; the Mexican wolf is probably also a peculiar species. Mr. Swainson states that out of 114 species of Mexican birds, examined by him, 67 are peculiar to that country; yet, among so many species there was but one new genus, *ptiliogonys*, which unites the tyrant shrikes with the caterpillar-eaters; 36 species are common to Mexico and the United States, and 11 to Mexico and South America. The lakes of the valley of Mexico contain that singular animal the *axocotl* of the Mexicans, the *siren-pisciformis* of Shaw, which seems to be intermediate between the other sirens and the protei.

The vast elevation of the greater part of Bolivia and Chili has strongly impressed the fauna of those regions with peculiarities. It is characterized as the region of the guanaco, the alpaca, and the vicuña, three distinct species, which have been sometimes confounded under the name of llama. They are the camels of South America, and were almost the only mammalia subdued and domesticated by the ancient Peruvians. This is also the peculiar region of the Condor, a bird as large as the læmergeyer of the Alps, the largest of the European raptores. It loves to dwell among the snowy solitudes of the Andes, perched on lofty pinnacles, from which it pounces on its prey in the subjacent valleys. The fauna, however, of these countries is still imperfectly explored.

Of the region extending from 30° S. lat. to Cape Horn, including the pampas of Buenos-Ayres, and the southern part of Chili, the fauna has been little explored. Among its quadrupeds are the numerous herds of wild horses and sheep, originally introduced by the Spaniards, but now spread over a great part of South America. The Antarctic and Chilian foxes seem to be peculiar. On its coasts many species of seals are found. The extensive pampas are the chosen haunts of the rhea or American ostrich; and, on its southern coasts, are found the huge, wingless, Patagonian penguin, with the whole genus of *pachyptila*.

At the discovery of America by Europeans the continent was without the horse, the cow, the sheep, the hog, the dog, and the common poultry of Europe; all of which are now spread over it in abundance, and in some places have relapsed into the wild state, in countries suited for their subsistence.—(*From the Article* PHYSICAL GEOGRAPHY, *by Professor Traill, in Ency. Britt. 7th edition.*)

PEOPLE.—The concurrent testimony of all travellers goes to prove that the native Americans are possessed of certain physical characteristics, which serve to identify them in places the most remote; while they assimilate not less in their moral character and usages. There are also in their multitudinous languages some traces of a common origin; and it may be assumed as a fact, that no other race of men maintains so striking an analogy through all its subdivisions, and amidst all its varieties of physical circumstances, while, at the same time, it is distinguished from all the other races by external peculiarities of form, but still more by the internal qualities of mind and intellect. But how are we to group the American nations into families, or, as some writers have attempted, into species? M. Bory de St. Vincent has endeavoured to show that the American race embraces four species besides the Esquimaux; but he has certainly failed to point out any such differences as establish a claim to a specific character. According to Dr. Morton, the most natural division of the Americans is into two families, which he calls the *Toltecan* and the *American*; the former of which bears evidence of centuries of half-civilization, while the latter embraces all the barbarous nations of the new world, with the exception of the Polar tribes, which

branch, they possess, perhaps, a larger and more expanded
and lips. The eyes are small, more or less oblique, and far
and thick; the body and limbs stout and full, even to clumsi
they differ little. None of the Americans are less susceptible
they are taught by compulsion seldom exceeds the humblest
The Patagonian branch includes the nations to the south of
Straits of Magellan; including also the mountain tribes of
distinguished by their tall stature, handsome forms, and inde
Fuegians, who call themselves *Yacannacunnee*, rove over the
del Fuego, which is computed to be half the size of Irelan
number has been computed by Forster at only 2000. The
Fuegians is altogether repulsive. They are of low stature,
faces, and small eyes. Their chests are large, their bodies cl
and ill-shaped legs. Their hair is lank, black, and coarse,
decided brown, like that of the more northern tribes. The
vacant, and their mental operations are to the last degree
are almost destitute of the usual curiosity of savages, caring
does not minister to their present wants.

Long, black, lank hair is common to all the American t
traces of the frizzled locks of the Polynesian, or the woolly
negro has ever been observed. The beard is very deficient, ar
gives them they assiduously root out. A copper-coloured skin
by most writers as a characteristic distinction of the American
is in general brown, of the hue most nearly resembling that
Morton coincides in opinion with Dr. M'Culloch that no epi
colour of the skin so correctly designates the Americans as t
There are, however, among them occasional and very rem
cluding all the varieties of tint from a decided white to an un
That climate has a very subordinate influence in producing th
be inferred from the fact that the tribes which wander in the
not darker than the mountaineers of the temperate zone. T
tribes of the Magellanic regions, beyond 55° S. lat., are dark
Moxobies, and Tobas, who are many degrees nearer the equat
are of a clear brown colour, sometimes approaching nearly to
tance from the tropic; while the Guyacas under the line are
complexion; the Charruas, who are almost black, live at th
still blacker Californians are 25° N. of the equator. Everywh
that the colour of the American depends very little on the l

epidermis of the Americans; a peculiarity of structure common to them with the African negroes, but entirely wanting in the Caucasian or white race.—(*M. Flourens, Annales des Sciences Nat. December* 1838, p. 361.) The Americans might also be divided into three great classes distinguished by the pursuits on which they depend for subsistence, namely, hunting, fishing, and agriculture. The greater number of them are devoted to hunting; the fishing tribes are not numerous, and are wholly destitute of the spirit of maritime adventure, and even of fondness for the sea. A few tribes were strictly agricultural before the arrival of Europeans, but a much greater number have become so since. Many tribes regularly resort to all these modes of subsistence, according to the seasons; employing the spring in fishing, the summer in agriculture, and the autumn and winter in hunting.

The intellectual faculties of this great family appear to be decidedly inferior, when compared with those of the Caucasian or Mongolian race. The Americans are not only averse to the restraints of education, but are for the most part incapable of a continued process of reasoning on abstract subjects. Their minds seize with avidity on simple truths, but reject whatever requires investigation and analysis. Their proximity for more than two centuries to European institutions has made scarcely any perceptible change in their mode of thinking or their manner of life; and, as to their own social condition, they are probably in most respects exactly as they were at the earliest period of their national existence. They have made few or no improvements in constructing their houses or their boats; their inventive and imitative faculties appear to be of very humble capacity, nor have they the smallest taste for the arts and sciences. One of the most remarkable of their intellectual defects is the great difficulty they find in comprehending the relations of numbers; and Mr. Schoolcraft, the United States Indian agent, assured Dr. Morton that this deficiency was one cause of most of the misunderstanding in respect to treaties entered into between the United States Government and the native tribes. The natives sell their lands for a sum of money, without having any conception of the amount; and it is only when the proceeds come to be divided, that each man becomes acquainted with his own interest in the transaction. Then disappointment and murmurs invariably ensue.

The Toltecan family embraces the civilized nations of Mexico, Peru, and Bogota, extending from the Rio Gila in 33° N. lat. along the western shore of the continent to the frontiers of Chili; and on the eastern coast, along the Gulf of Mexico, in North America. In South America, on the contrary, this family chiefly occupied a narrow strip of land between the Andes and the Pacific Ocean, bounded on the south by the great desert of Atacama. Farther north, however, in New Granada, were the Bogotese, a people whose civilization, like their geographical position, was intermediate between that of the Peruvians and the Mexicans. But, even before the Spanish conquest the Toltecan family were not the exclusive possessors of the regions which we have assigned to them; they were only the dominant race or caste, while other tribes of the American race always constituted a large mass of the population. The arrival of the Spaniards reduced both classes alike to vassalage; and three centuries of slavery and oppression have left few traces of Mexican and Peruvian civilization, except what may be gleaned from their history and antiquities. These nations can no longer be identified in existing communities; and the mixed and motley races which now respectively bear the name, are as unlike their predecessors, in moral and intellectual character, as the degraded Copts are unlike the ancient Egyptians. It is in the intellectual faculties that the great difference between the Toltecan and the American families consists. In the arts and sciences of the former we see the evidences of an advanced civilization; their architectural remains every where surprise the traveller and confound the antiquary. Among these are pyramids, temples, grottoes, bas-reliefs, and arabesques; while their roads, aqueducts, and fortifications, and the traces of their mining operations, sufficiently attest their attainments in the practical arts of life.

With respect to the American languages, it may be sufficient to state, that they exhibit resemblances not less remarkable than those which we have noticed in the physical and moral characteristics of the people. From Cape Horn to the Arctic Sea, all the nations have languages which possess a common distinctive character, but still apparently differing from all those of the old world with which we are acquainted. This resemblance is not of an indefinite kind, but consists generally in the peculiar modes of conjugating the verbs by the insertion of syllables; which gave rise to the remark of Vater, that this wonderful uniformity "favours in a singular manner the supposition of a primitive people, which formed the common stock of the American indigenous nations."—(*Crania Americana, &c. by Samuel George Morton,*

M.D. 1 vol. 4to., Philadelphia 1839: p. 62 to 86.) History and physi
have hitherto completely failed to throw any light on the origin of the
Americans; and it is needless to repeat the numerous hypotheses and c
which have been hazarded on the subject.

According to M. Balbi the American nations employ more than 438 dif
guages, embracing upwards of 2000 dialects; but all the people, he says,
vided into two great classes, namely, the indigenous or aboriginal Amer
those of foreign origin; the latter being the most numerous, and, with the
of the negroes, now forming the dominant people of the whole continent.
bers of all the various races he estimates thus: —

Europeans and their descendants, all of the white race,	14,600,(
Indians, or native Americans, of the brown race, - -	10,000,(
Unmixed Africans, of the black race, - - - - - - -	7,400,(
Races produced by the intermixture of the pure races, -	7,000,(
Total,	39,000,(

And he then gives the following

Table of the People of America, classed by their Languages.

I. INDIGENOUS PEOPLE.

The *Pehcrais* or *Yaccanacas*, a very scanty race, who inhabit Tierra del Fuego, with so
portions of the continental coast. They lead a miserable life, only to be compared with
of the native Australians; they live on shell-fish, and squat themselves in places whe
found most abundantly, moving their habitations only when the supply is exhausted. T
in stature, ill-looking, and ill-proportioned, with a colour resembling old mahogany or
(Sonnini, p. 894.

The *Tehuelhets*, a numerous people of Patagonia, divided into several tribes, which, un
names, wander in the vast solitudes of that country. Some of them are of large statur
even entitled to be called giants, a circumstance which seems to explain the relations of
that all the Patagonians were gigantic.

The *Chilian family* comprises several races, who occupy the high valleys of northern
eastern Chili, beyond the Andes, and also extend from southern Chili into Patagonia.
numerous of them, and the most remarkable, are: The *Aucas* or *Moluches*, called by th
Araucanians; and those who live to the west of the Andes, forming the powerful Arau
federation. This warlike people, after long continued wars with the Spaniards, now live i
the Chilenos. Their territory extends along the coast of the Pacific, from the river Bi
ward, and is divided into four governments, called *uthal mapus*, each superintended by
is independent in the administration of his territory. These four chiefs, with the subs
vernors of provinces and districts are hereditary in the male line; presenting a striking
to the ancient feudal aristocracy of Europe. The Araucanians have been considered the m
of the native American races; they are indeed highly susceptible of mental culture, but
the restraints of civilization, and those of them who have been educated in the Spanish c
embraced the first opportunity to return to the haunts and resume the habits of their na
are a robust and muscular race, of a lighter complexion than the surrounding tribes, a
age with few infirmities. They are brave, discreet, and proverbially cunning; patient in
thusiastic in enterprise, and fond of war. They soon discovered the value of the military
the Spaniards, and especially the great importance of their cavalry, and so early as 15
after their first encounter, they had already several squadrons of horse in their army. Th
ever, only less savage than their neighbours; their agriculture is very imperfect; they
built houses, and have even made attempts to establish a regular form of government.
most numerous race who still preserve their independence. After the Aucas come the *Ur*
who live to the south of the former along the west coast of Patagonia, as far as Tre Stra
lan; their principal tribes being the *Cunchi, Chonos, Pyuns*, and *Kegenas*. The mountain
family have in general a larger stature than the tallest Europeans. Mounted on horses li
tars, they suddenly unite in troops, and make journeys of several hundred miles to ravage
country.

The PUELCHES, who are divided into several tribes, of which some are called *Pampas*
niards, formed one of the most powerful nations of South America. They were found in
southern part of the territory of Buenos Ayres, between the rivers Colorado and Negro
now entirely disappeared from the plains, and the remnant have taken refuge in the Andes

The ATACORY-ARAUCAN FAMILY, to which belong the *Abipones*, a very tall and warlike p
blished in Chaco; and the *Mepenes*, equally athletic, but reduced to a small number by
with the Mocobies.

The PERUVIAN or QUICHUA FAMILY, comprises: 1. The *Peruvians*, who form the princ
the population of Peru, Bolivia, and Equador. Although the Peruvians were ignorant of
writing, and their quippos and symbolic paintings were inferior to those of the Mexicans
nevertheless, at the period of the arrival of the Spaniards, the most polished people of S
rica. 2. The *Aymaras* or *Aymares*, also a numerous race, divided into several tribes,
diocese of La Paz, and part of that of La Plata or Chuquisaca, in Bolivia.

The CHIQUITOS, a numerous people, who wander in the vast region which bears the
Bolivia. A great part of them have embraced Christianity, and have become dependents
livian republic.

The CARAPUCHOS, who live in Peru, along the Pachitea, an affluent of the Ucayle;
ported to be cannibals.

The GUARANI FAMILY comprises four principal nations, subdivided into a great numb
and hordes, spread over Brazil and a great part of Spanish South America. The *Guaran*
so called, live along the Parana, the Uruguay, and the Ibicuy. Converted by the Je
eighteenth century, they presented the singular spectacle of a theocratic or priestly g
powerfully organized; but the seven missions in the Brazilian province of San Pedro, a
sion district to the right of the Parana, in Paraguay, are all that now remain of the Jes
The *Itatinans*, formerly spread, under different names, over all Brazil, but are now r
few tribes. The *Omaguas*, who are now few, and live along the Amazon, formerly acted

part in the history of these regions. In "an enumeration of the various Indian nations, tribes, and hordes, at present found in Brazil," Dr. Von Martius specifies 250 resident in different parts of the empire, the principal consisting of the various branches of the *Tupin* or *Tapinambase* family, of which Balbi's Guaranis are only one. These Tupis or Tupinambases, were formerly the most powerful and most widely extended people in Brazil, but are now, through the predominance of the whites, either losing their nationality and language, or becoming extinct. Their remains, now difficult to be recognised, may be distributed into five distinct groups: 1. The Southern Tupis or Guaranis, in Paraguay, Monte Video, and Rio Grande do Sul; 2. The Eastern or proper Tupis, scattered along the shore from St. Catharine's Island to the river Amazon. They speak the proper Tupi tongue, now called the *lingua geral* (general language) of Brazil; 3. The Northern Tupis, remains of whom are found in Para, and on both sides of the river Amazon, as far as Topinambarana; 4. The Central Tupis, who are now the only portion living in a state of complete independence, occupy the upper portion of the Rio Tapajos; but we possess no accurate or detailed accounts of them; 5. The Western Tupis, who speak the West-Guarani dialect, and consist of the *Chiriguanas* in the province of Santa Cruz de la Sierra, the *Cirionos*, and the *Guarayos*.—(*Journal R. Geog. Soc. Lond.* II. 210.)

The Botecudos or Engerekmoung, known formerly by the names of *Aymores* or *Amboures*, fierce cannibals, who occupy a space parallel to the coast of Brazil, between the Rio Pardo and the Rio Doce. Their principal residences are found along the latter river and the Rio Belmonte, in the provinces of Bahia and Espiritu Santo.

The Mundrucus, a very warlike and ferocious people, the most numerous and most powerful in the province of Para, are found between the Xingu and the Tapajos; but of late almost all their tribes have lived in friendship and alliance with the Portuguese.

The Payagua-Guaycuru Family, which comprises five principal nations. The *Payagua*, in the vicinity of Assompcion in Paraguay; and the *Guaycurus*, along both banks of the Upper Paraguay, where they live by the chase, by fishing, and the produce of their numerous herds of beeves. The chiefs form a sort of aristocratic confederation; and the people are divided into the three classes of nobles, soldiers, and slaves. They have been sometimes called *Cavalleiros*, from their making their military excursions on horseback, which rendered them formidable to all their neighbours. But they now live at peace with both the Spaniards and the Portuguese. The *Payagua* were formerly numerous, and masters of the navigation of the Paraguay, and accompanied the Guaycurus in all their expeditions. They are generally tall, and it is not rare to find among them individuals of more than six feet.

The Guanas, a numerous people in Chaco, in the southern part of Matto-grosso, and in Paraguay The greater part of them have become settled agriculturists.

The Bororos, a numerous people in Matto-grosso.

The Carib-Tamanaque Family comprises several nations, of which the principal are:— The *Caribs*, *Caraibes* or *Carina*, a very numerous people, who formerly possessed all the smaller Antilles, with an immense extent of the adjacent continent. They are still met with in different parts of Guiana, and along the Orinoco. Humboldt has remarked that, next to the Patagonians, the Caribs are the largest and most robust people in the world. They formerly dealt in slaves; but, though very cruel and ferocious, the Guiana Caribs never were cannibals like their brethern in the Antilles, among whom this horrible practice was so common, that all man-eaters have been called *cannibals* (properly *carribals*), from their name. The *Tamanaques*, formerly very powerful but now reduced to a small number, live along the right bank of the Orinoco; to them may be ascribed the symbolical figures sculptured on the rocks, relating to the belief in Amalivaca, who is the chief mythological personage of equinoctial America. The *Guaraunos*, who occupy the delta of the Orinoco, are a sort of sailors, who live on trees or in boats. They are, however, of considerable political importance, since it is in their power to facilitate any military expedition, which may be directed against Colombian Guiana, by the way of the Orinoco. The *Chaymas* and the *Cumanagottes*, numerous tribes established in the department of Maturin; and the *Arawaques*, in the same department, and on the banks of the rivers Berbice and Surinam. The *Warraous* live on the coast of Pomeroun, from Morocco creek near Cape Nassau to the Orinoco; they are few in number, but exhibit remarkable skill in the construction of their piragues.

The Oyampus, a warlike and half nomadic people, now the most numerous race in French Guiana, where they live along the Upper Oyapock, and the Jari or Rouapiri, an affluent of the Amazon.

The Guahiva or Guagivos, a numerous, nomadic, and ferocious race, wander along the lower Meta, from the mouths of the Pauto and the Cassanara to its confluence with the Orinoco. They are a source of great terror to their settled neighbours.

The Ottomaks, a miserable, ferocious, and dirty race, established along the Orinoco, between its two affluents, the Sinaruco and the Apure, and particularly in the mission of Uruana. They are in the practice of eating with impunity a kind of earth, which during the period of the inundations, forms their principal food.

The Manitivitanos, a ferocious and warlike people in alliance with the Portuguese, and established on the banks of the Rio Negro.

The Marepizanos are neighbours of the Manitivitanos.

The Manaos, a people of the province of Para, are still numerous and warlike, though much less so than formerly, when they possessed the whole course of the Urarira, an affluent of the Rio Negro, and extended as far as the Rio Chiuara. Great part of them have embraced Christianity, and live intermixed with other people along the Lamalonga, Thomar, &c.

The Saliva Family comprises several races, of which the principal are:— The *Saliri* or *Salivas*, an agricultural people, were formerly powerful, but are now much reduced; they are, however, still numerous in different parts of Spanish Guiana. They have a great taste for music; and the Jesuits having cultivated that taste, the Salivi have become celebrated throughout the region of the Orinoco, as expert instrumental musicians. The *Macos*, or *Macusi*, called *Piuroas* by the Spaniards, a numerous agricultural people, of gentle manners, are found along the Upper Orinoco and its affluents.

The Caverre-Maypure Family, of which the principal nations are:— The *Caveres* or *Cabres*, formerly numerous, powerful, warlike, and addicted to cannibalism, are now reduced to a small number in the missions of the Orinoco. The *Guaypunabis*, established along the Upper Orinoco, are incontestibly cannibals, though, in other respects, the most civilized of all the dwellers on the Upper Orinoco. The *Maypures*, also on the Upper Orinoco, formerly numerous and powerful, are now reduced to a small number. The *Moxa*, a numerous race, occupy a large portion of the province of Moxos in Bolivia; but a great part of them are subjects of the Missions.

The Goahiros occupy the north-western part of the peninsula formed by the Gulf of Maracaybo and the Caribbean Sea. They maintain commercial relations with Jamaica, and several of them speak English. They hold in subjection the *Cocinas*, another barbarous race who occupy the eastern coast of the same peninsula.

The Cunacunas, a warlike people, who occupy the eastern part of the isthmus of Panama.

The Maynas or Mainas, a numerous and warlike nation long established in the country to which they give their name, along the Morona and the Lower Pastaza.

The Changuenes, a numerous, warlike, and cruel people, established in the eastern part of Costa-rica, in Central America, who are the terror of all their neighbours.

The TAUKAS, TOWEAS or XICAQUES, to the south, the MOSCOS or MOSQUITOS, in the middle, and the POYAIS, to the north-west, are the three principal nations, who live along the coast of that part of Central America, between Honduras and the Isthmus of Panama.

The CHOLS or CHOLES, a numerous race, who dwell on the confines of Yucatan and Vera Paz.

The LACANDONS, a numerous people of Yucatan, where they occupy the banks of the river Passion, and possess a great many canoes.

The MAYA-QUICHE FAMILY. The *Mayas* or *Yucatans*, form the great majority of the people of Yucatan, and of a part of Tabasco; their ancestors were nearly as far advanced in civilization as the Mexicans. The *Mames* or *Pocomams*, a numerous people of Guatemala and San Salvador. The *Quiches*, *Kachiqueles*, and *Kachis*, are numerous tribes in Guatemala, where they were formerly dominant.

The CHAPANEQUES, in Chiapa, who, at the period of the arrival of the Spaniards, formed a powerful republic, and had subjected several neighbouring tribes. Their traditions speak of Vodan, grandson of an illustrious old man, who was saved from the great inundation in which the greater part of mankind perished, by means of a raft. Vodan took a part in the erection of a great building by which men undertook to reach the skies; but the work was interrupted; each family received thenceforth a different language, and the great spirit, Teoth, ordered Vodan to go and people the country of Anahuac. It is impossible, says the author of Views of the Cordilleras, not to be struck with the resemblance between these ancient traditions of the Americans and those of the Hebrews.

The MIXTEQUES, a numerous people of Oaxaca.

The ZAPOTEQUES, a numerous people of the same state, whose ancestors were distinguished by their progress in civilization, even before they were subjected by the Mexicans. Humboldt ascribes to them the famous palace of Mitla.

The TOTONAQUES, a people extended over a great part of Vera Cruz and the district of Zacatlan, in the state of Puebla.

The MEXICAN FAMILY. The *Mexicans* or *Aztecks* occupied the country from 37° N. lat. to the lake of Nicaragua. Their division of the year, more exact than that of the Greeks and Romans; their ideographic writing; the art of cutting large blocks of stone; their maps of their country, and of the regions which their ancestors had overrun; their cities, roads, dykes, canals; immense pyramids very exactly set to the cardinal points; their civil, military, and religious institutions; altogether entitled this people to be considered as the most civilized race found by Europeans in the New World. Their monuments long forgotten, have recently attracted the attention of the learned in Europe and America. The *Toltecks*, to whom is attributed the construction of the pyramids of Teotihuacan and other ancient monuments, have long since disappeared. They were regarded as the principal stock of this family, to which belonged also the *Mecos* and the *Pipils*, the former of whom wander in the vast solitudes of Durango, and disturb and harass their peaceful neighbours. The Pipils, descended from a Mexican colony, live in San Salvador near Sonsonata, San Salvador, and San Miguel.

The OTHOMS, a numerous race, spread over the dioceses of Mexico, Puebla, Mechoacan, and Guadalaxara.

The TARASQUES, a numerous people in Mechoacan, distinguished for the mildness of their manners and their industry in the mechanic arts.

The TARAHUMARA FAMILY, a numerous people who are found in the missions of Tarahumara, in the diocese of Durango, extending through a part of the valleys of the Sierra Madre, from the 24° to the 30° N. lat.

The YAQUI or IAKIS, a numerous people of Sonora, who live along the Yaqui or Hiaki river.

The MOQUI, a peaceable, agricultural, and somewhat civilized people, who live along the northern bank of the river Yaquesila.

The APACHES, a numerous nation divided into several tribes, spread over the country from San Louis de Potosi to the northern extremity of the Gulf of California. With few exceptions, these tribes are nomadic; they are very troublesome to their Spanish neighbours, whom they alarm with frequent and terrible attacks. Their warriors are mounted on horseback, and armed with long lances.

The PANIS-ARRAPAHOES FAMILY comprises several nations. The *Panis* or *Pawnees*, a numerous and warlike people, who occupy three large villages on the banks of the Wolf river, an affluent of the Platte. They are engaged in constant war with the Sioux, the Osages, the Konzas, the Corneilles, and others. One of their most powerful tribes, the *Skeje* (Wolf-Pawnees), has abolished the human sacrifices which they used to make every year to the planet Venus, before commencing their rural labours, in order to obtain a rich harvest. The *Arrapahoes* or *Arrapahays*, a numerous tribe who live along the Platte, between the Pawnees and the Canenawish. These, and other kindred tribes, who are warlike and excellent riders, form a sort of confederation, not only formidable to the natives, but also troublesome to the Spaniards, particularly to those who are established along the eastern and northern frontiers of Mexico. The *Ietans*, *Tentans*, or *Tetans*, a nomadic, powerful, and still numerous people, named *Camanches* or *Camanches* by the Spaniards, and *Paducas* by the Pawnees and Osages, wander in the extensive countries comprised between the sources of the Missouri, the Upper Arkansas, the rivers of Trinidad, Brazos de Dios, Colorado, and Rio Bravo del Norte, and the Sierra Madre, and Sierra dos Mimbres. Like other Americans they have learned to ride on horseback; they pass with great rapidity over immense distances, carrying desolation and death into the Spanish settlements, whose inhabitants are thus obliged to travel only in armed bodies.

The COLUMBIAN FAMILY comprises a great number of independent tribes spread over the basin of the Columbia River, and the upper part of the basin of the Missouri. The principal tribes are: The *Tushepaws*, who live near the sources of both rivers, and extend for some distance down the Columbia. The *Multnomah*, whose principal tribe occupies the island of Wappatoo, at the confluence of the Multnomah with the Columbia. The *Shahala*, who live to the right of the Columbia, below the confluence of the Canoe river. The *Snake Indians*, also named *Alpatan* and *Shoshonees*, wander along the southern affluents of the Columbia, and particularly the Lewis and the Multnomah. It may be said generally of all the members of this family, that they have mild manners, live in well-built cabins, and subsist almost exclusively on roots and fish. Nearly the whole of them flatten artificially the heads of their children; on which account they have received the general English name of *Flatheads*. The *Shoshonees*, the *Chopunish*, the *Sokulks*, the *Eschelouts*, the *Enechurs*, and the *Chilluckittequaws*, are good horsemen, and the first three tribes possess a great number of horses.

The SIOUX-OSAGE FAMILY comprehends a great number of independent tribes. The principal are the *Sioux* or *Dacotas*, called also *Ochenti-shakong*, *Nawcotah*, and *Nadowessies*, who are the most numerous, and most powerful of all the remaining North American races. They are subdivided into a great number of tribes, of which the *Dacotas* and the *Assiniboins* are the most powerful. The Dacotas properly so called occupy the vast region which extends along the Middle Missouri, the St. Peter's River, the upper Mississippi, the upper Red River, Lake Winnipeg, and their affluents, from the 42° to the 47° N. lat. The Assiniboins, named *Hoha* (the Revolted) by the Dacotas, also *Stone-Sioux* and *Assinepotue*, live in alliance with the Chippeways, to the north of the Dacotas, and to the west of Lake Winnipeg, to the north of the Pembina; and along the Assiniboin, Saskatchawan and Moose rivers. They have a feud with the Blackfeet, and extend their excursions to the Rocky Mountains; and with their kindred the Dacotas, they have carried on an exterminating warfare since the commencement of the 17th century. All the Sioux form a confederation of independent tribes, who unite

in a general council on matters of common interest. To this council each tribe sends a deputy. The Sioux begin their year at the vernal equinox, while their neighbours the Chippeways begin theirs at the summer solstice. They have no division by weeks, and reckon their time by sleeps or nights. The *Omawha* or *Maha*, whose principal residence is at a great village on the Elk-horn, an affluent of the Platte, are divided into several tribes. The *Mandanes*, a scanty race, live along the banks of the upper Missouri, in two villages. They are remarkable for the singularity of their religious faith, and for the great whiteness of complexion of some of their members. The *Wawsash*, generally called *Osages*, a brave and warlike nation, live in large villages, and carry on implacable hostilities with their western neighbours; but live in friendship with the Sakis and the Konzas. They are chiefly agricultural, and occupy the district which bears their name, in the state of Missouri. They are divided into three principal branches, several of which have embraced Christianity, and have made considerable progress in civilization.

The MOBILE-NATCHES or FLORIDIAN FAMILY comprises six principal independent nations, each subdivided into several tribes. The *Natches*, now almost extinct, were formerly very powerful; the existing remnant is dispersed among the Creeks, Chickesaws, and others. They were particularly remarkable for their monarchical government, their great civilization, and for the worship which they rendered to the sun, in a temple where they maintained a perpetual fire. The *Muskohges* or *Creeks* occupy several fertile valleys comprehended within the States of Alabama and Georgia, where they live in towns and villages. They have made great progress in civilization, and have instituted schools for the instruction of their children. They are divided into two principal branches. The *Upper Creeks*, or Creeks properly so called, occupy the higher parts of Alabama, where they form a powerful confederation, with a president styled Myco. The Lower Creeks, called also *Seminoles*, occupy the plains traversed by the river Flint; they are much less civilized than the Creeks; but are very warlike, and have for several years maintained an obstinate and destructive warfare with the military force of the United States, who are endeavouring to subdue or remove them. The *Chickasaws*, a numerous people, now united with the *Yazous*, live in the northern part of the State of Mississippi. They have made rapid progress in civilization, and have already collected themselves into large villages, where they live by cultivating the ground: at the beginning of the 18th century they were the dominant people of this region. The *Chactaws* or *Choctaws*, called also *Flatheads*, are a numerous agricultural people, who live in the States of Mississippi, Louisiana, Arkansas, and Alabama. The *Cherokees*, a numerous race, whose territory comprises the north-west angle of Georgia, the north-east of Alabama, and the south-east of Tennessee; but by a treaty made with the United States they have agreed to transport themselves to the west of the Mississippi, where a tract of country has been allotted to them. In 1818, about a fourth part of the nation, preferring the wild life of their fathers, removed to the banks of the Arkansas, while the rest abandoned the savage state, and adopted the religion and the usages of their civilized neighbours. They now occupy commodious houses, and possess 70 villages. Some of them have well-cultivated farms, and large stocks of cattle; while others, devoting themselves to mechanical arts, manufacture stuffs, and possess flour and saw mills. The most of them can read, write, and cypher; and almost all speak English. They have established a library, a museum, and a weekly journal, called the Cherokee Phœnix, which is published by a Cherokee, in the national language, with an English translation; and in 1827 they formed and promulgated a constitution, under which their government is composed of three distinct powers, legislative, executive, and judicial, in imitation of that of the United States.

The MOHAWK, HURON, or IROQUOIS FAMILY, consists of a great number of tribes, comprising the remaining descendants of much more numerous and powerful races. The *Mohawks*, now reduced to a small number, dwell partly near Niagara, and partly on the bay of Kenty. They formed part of the confederation called the Five Nations. The other members were the *Senecas*, *Onondagoes*, *Oneidas*, *Cayugas*, *Tuscaroras*, *Canoys*, *Mohegans*, and *Nauticokes*. The first five are named *Maquas* by the early Dutch voyagers, and Iroquois by the French. At the period of the French settlement of Canada, the Five Nations occupied the country between Montreal and lake Champlain; at the time of their greatest power they subjugated the Chippewayan family, and were always the allies of the English. In 1794 most of them began to devote themselves to agriculture and the breeding of cattle. The Mohawks of Canada have adopted the European costume. The *Senecas*, who are now the most numerous of these races, though they do not exceed 1600 individuals, live in the states of New York and Ohio, and make the nearest approach to the whites in their dress and manners. The *Hurons*, formerly a powerful nation, to the east of the Huron, are now reduced to a small tribe, who live on the western shore of lake St. Clair; while a small part of them occupy the village of Loretto, nine miles from Quebec, where they have become catholics, and devoted themselves to agriculture.

The LENNAPPE or LENAPE FAMILY. The *Shawanos*, once a numerous and wide-spread people, have only a few small remnants on the Upper Wabash in Indiana, near the sources of the great Miami in Ohio, and in Illinois. The *Mequachaques*, one of their tribes, like the Levites of old, have the exclusive charge of their sacrifices and religious services; while the *Kikkapoos* are noted for their warlike propensity. The *Sakis*, *Sauckees*, and *Ottogamies*, called also *Foxes*, are two other fragments of the same great nation; who live along the Upper Mississippi and its affluent the Ayooa. They are the allies of the Sioux, are stationary, and cultivate maize. The *Miamis* and the *Illinois* are the best known of all the tribes of this nation, to which seem also to belong the *Pottowatameh*. The most of them live in Indiana, Illinois, and Michigan. The *Pottawatameh* and *Winnebagoes* have sold to the United States all their lands south of the Wisconsin, with the exception of a few lots. The *Lenni-Lennape* or *Lenopea*, named *Delawares* by the English, and *Loups* by the French, were formerly very numerous, and spread over a great part of the east coast of the United States. The remains of them now live in Indiana and Ohio. The *Mahicanni* or *Mohicans*, and the *Abenaqui* are the two principal branches of a numerous nation, who formerly lived in New England and New York. The most of them, now called the *Stockbridge Indians*, have united with the Five Nations; but a small number are still found at the east end of Long Island. The *Micmaks* or *Gaspesiens*, formerly very numerous, and spread over all the east coast of Canada, New Brunswick, Nova Scotia, and Newfoundland, are now found only on the south-west coast of Nova Scotia, and in the interior of Newfoundland, where they are still savage idolaters, while the others have all become Christians, and made rapid progress in civilization. The *Algonquins* and the *Chippeways* are the two principal and best known branches of a nation spread over Canada, in Michigan, Huron territory, and the district of Mandanes in the United States. They are always at war with the Sioux, and use fire-arms. The *Knistenaux*, a numerous people, scattered over all Lower Canada, part of Labrador, and New South Wales, and still farther west. The *Nenawehk* live along the Severn, and the *Abbitibes*, along the river and lake which bear their name. The *Chippewyans* or *Chepayans*, whose numerous tribes are spread over the basin of the Mackenzie, the Coppermine river, and part of that of the Tacoutche-Tesse. The *Carriers*, in New Caledonia. The *Indians*, who dwell in the neighbourhood of Santa Barbara in California, belonging to this family, are few in number, but remarkable for their civilization.

The WAKASH or NOOTKA, a very warlike nation, live in large towns on Quadra's and Vancouver's Island, which from them would be much more appropriately and less awkwardly named Nootka Island.

The KOLUCHE or KALOCHE FAMILY, to which belong the people who live along the coast from Jakutat to Queen Charlotte's Islands, are all remarkable for their courage, their industry, and their ingenuity and practical skill in the construction of their houses, canoes, and implements of war and

fishing. They also construct drinking vessels, pipes, and other articles of a soft argillaceous stone; and these objects are at once symmetrical in form, and elaborately decorated with figures.

The ESQUIMAUX consist of five principal nations, of which one belongs to Asia. Those of the new world are divided into three principal branches, namely, the *Karalits* or *Kalalits*, who inhabit Greenland; the *Esquimaux* properly so called, who live on the north-east coast of Labrador; and the *Western Esquimaux*, who wander near the mouths of the Mackenzie and the Coppermine rivers, and other places along the Polar Basin. To this family belong also the *Aleutians*, who inhabit the long chain of the Aleutian Islands, and the western extremity of Alashka. The *Aglemoutes* or *American Chuckches*, live under the protection of Russia, along the Nussegak. Other tribes of the same nation are found in the islands of Nuniwok and Stuart, and along a part of the adjacent coast. Others, under the name of *Kitegmes*, occupy the American coast from Behring's Strait to Kotzebue's Gulf. Some live in the Isle of Chunakak, known also by the names of Chibono, St. Lawrence, Sindow, and Clerk Island. Some writers suppose the Esquimaux to be a part of the same original stock with the other Americans, partly because there is some resemblance between them in features, partly from partial analogy of language, and partly from a determination to merge the American in the Mongolian. It is obvious nevertheless, says Dr. Morton, that the continent of America was originally peopled, as it is yet, by a very distinct race, and that the Esquimaux arriving in small and straggling parties from Asia, necessarily adopted more or less of the language and customs of the people among whom they settled, or with whom they came in contact. Hence the Esquimaux, and especially the Greenlanders, are to be regarded as a partially mixed race, among whom the Mongolian physical character predominates, while their language presents obvious analogies to that of the Chippewyans, who are their neighbours to the south.—(*Crania Americana*, p. 63.)

The Caucasian or White races who have settled in America belong chiefly to the nations of Western Europe. The Spaniards colonized Mexico, the northern, western, and central portions of South America, and part of the West Indies; the Portuguese colonized Brazil; and the English colonized the eastern part of North America. French settlements were also widely extended along the St. Lawrence and Mississippi; and in Canada the French still form two-fifths of the population unmixed. Numerous Dutch colonists settled in New York and in New Jersey. To these have been added Swedes, Germans, Swiss, Scots both Celtic and Saxon, and Irish, in great numbers; and out of all these has been formed the great Anglo-American family, which is now rapidly spreading over all the habitable portion of North America.

African negroes, in large numbers, have been, during the last three centuries, imported into America, as slaves. Pure negroes still form nearly a fifth of the total population; while the race sprung from their intermixture with the white and brown races are also very numerous. The slave-holding states are the southern portion of the American Union, Texas, the Spanish, Danish, Dutch, and French colonies, and Brazil; in the last of which the slaves are particularly numerous, and of the most ferocious character. All the negroes in the British possessions are now free, and have shown themselves, since they acquired their freedom, to be a peaceable and well-disposed people. The negroes and mixed races of Hayti recovered their freedom, and established their national independence during the period of the French Revolution; but as yet they have made no very great or rapid progress in civilization.

RELIGION. — All the European colonists, and many of the aborigines profess Christianity, but several of the independent tribes are still addicted to fetichism, or to what may be called sabeism or dualism. It is very remarkable, that among all the tribes, however savage, we find an idea, more or less clear, of a Supreme Being, who governs the heaven and the earth; of an evil spirit who shares with him the dominion of nature; and of the immortality of the soul, or rather, of a future state of existence. Several of the tribes have priests or conjurers; some have neither; but all believe in the existence of invisible beings and of a future life. Some represent God under the form of a star; some as an animal; some, on the contrary, see him only in the phenomena of nature. A great number of religious creeds, based on supposed revelations, as well as the religions of the ancient Mexicans, Peruvians, and Muyscas, have disappeared with the conversion to Christianity of those who professed them; but some part of the creed and religious practices of the three last-mentioned nations, seem still to be preserved among their descendants. It is even curious to observe, in the ancient worship of Peru, traces of the Hindoo trimurti; to meet with the doctrine of transmigration in the creed of the Tlascalteks; to see the Pastoux, in the centre of South America, living on vegetables, and abstaining from flesh; and to find among the Mexicans, traditions of the mother of mankind having fallen from her estate of innocence and happiness; of a great flood, in which a single family escaped on a raft; and of a pyramidal edifice raised by the pride of mankind, and destroyed by the wrath of the gods; ceremonies of purification at the birth of children; images made of maize flour, and distributed in portions to the people assembled in the temples; confession of sins made by penitents; and religious associations resembling those of the monks and nuns of Europe. At the arrival of the Spaniards human blood flowed in the *teocallis* or temples of the Mexicans and the Mayas; and the Peruvians offered at Cuzco, before the appearance of Manco-Capac, all the cruel sacrifices of the Hindoos. Even the worship of the sun, introduced by the Incas, though a milder form of religion, was not free from human sacrifices; thousands of human victims were immolated on the tomb of the monarch. The cannibals of Brazil had a less sanguinary worship, and their creed bore a very distinct impress of dualism, which is still met with among the people of this vast continent. The Cahetes, however, are said to have had neither creed nor religious ceremonies.

The people of the Upper Orinoco, Atapapo, and Inirinda, have no other objects of worship than the powers of nature. They give the name of Cachimana, or the

Manitou, to the Great Spirit who rules the seasons, and provides the harvests. Besides Cachimana there is an evil spirit, named Jolokiamo, who is less powerful, but more cunning and more active. Along the banks of the Orinoco, says Humboldt, there is no idol; but the *botuto*, or sacred trumpet, is an object of veneration. As a qualification for a person to be initiated into the mysteries of the botuto, and become a *piache* or conjurer, he must be of pure morals, and remain in celibacy. The initiated submit to flagellations, fasts, and painful exercises. There is only a small number of the sacred trumpets; the most celebrated of which is placed on a hill near the confluence of the Tano and Rio Negro. Women are not allowed to see this marvellous instrument; and are even excluded from all the ceremonies of worship. If one of them should happen to see the trumpet, she is put to death without pity.

The Sioux, the Chippeways, the Sakis, the Foxes, the Winebagoes, the Menomenes, and other tribes of North America, all believe, perhaps, in a Great Spirit; but there is no individual among them who has not a favourite object of reverence, in some animal, tree, herb, or root. Every chief of a family, every old woman, and almost every individual, has a collection of herbs and medicinal roots, which they call the medicine bag, and regard as the sanctuary of so many divinities. They keep it carefully in their tents, and never separate from it when they are at war, or on a journey. Among several of these tribes, when they are settled for a portion of the year, there are huts, where girls are placed to watch over the fire which is kept burning in the centre, like the Roman vestals, the Peruvian virgins of the sun, the guardians of the prytaneum at Athens, and the Guebres of Persia and India. It seems to be considered as an emblem of the sun, or at least is consecrated to that vivifying luminary.

The religion of the Araucanians, Natches, Choctaws, and some other tribes, is a kind of Sabeism. The Cahans make the most extravagant gestures in addressing their prayers to the Supreme Being, whom they implore every morning. The Knistenaux regard as spirits the fogs which cover the marshes of their country. The Chippewyans believe themselves to be descended from a dog, and consequently regard that animal as sacred; they represent the Creator of the world under the figure of a bird, whose eyes flash lightning, and whose voice produces thunder. They have also traditions of a great flood, and of the long life of the primitive human race.

Among several of the North American tribes, and even among some of those in the South, fanaticism occasions scenes not less cruel than those with which the Hindoos celebrate their Currack pûja; but our space does not allow us to enumerate ceremonies which are almost as various as the tribes that practise them.

Christianity is professed by all the European colonists, and by many Indian converts. The Catholic Church is dominant and exclusive in Brazil and all Spanish America; but in some of the more remote regions, the natives preserve their ancient idols along with the images of the saints; crown them with flowers, and address them in secret prayers. There are also a great many Catholics in the United States and in Canada. In English America, or the United States and British territories, all the various sects of Protestants are found, and also a few Jews.

DIVISIONS. — America is naturally divided into three great portions, namely, *North America*, *South America*, and *West Indies*; but, politically, it is divided into a number of independent states and territories, with the foreign possessions of European powers. These we shall describe in the following order: 1. Russian America; 2. British Continental Territory in North America; 3. United States of North America; 4. Republic of Texas; 5. Mexico; 6. California; 7. Yucatan; 8. United States of Guatemala, or Central America; 9. New Granada; 10. Venezuela; 11. Equador; 12. Peru; 13. Bolivia; 14. Chili; 15. United States of the Rio de la Plata; 16. Paraguay; 17. Uruguay, or Banda Oriental; 18. Empire of Brazil; 19. British, French, and Dutch Guiana; 20. Patagonia; 21. The Islands. 22. To these we shall add the *Arctic Regions*, or *Greenland* and *Spitzbergen*.

I. *RUSSIAN AMERICA.*

This territory comprehends the north-western portion of the continent, extending from Behring's Strait eastward to the meridian of Mount St. Elias, along both the Arctic and the Pacific Oceans; and from that mountain southwards, along the maritime chain of hills, till it touch the coast, about 54° 40′ N. lat., forming an area of about 390,000 square miles. It is in the immediate possession of the Russian American Company; and the settlement originated with a company or association of merchants formed at Irkutsk, who obtained from the Emperor Paul the exclusive privilege of trading for peltry in the Aleutian Islands and the adjacent coasts. This privilege was extended by the Emperor Alexander over all Russian America. The capital and principal factory was first established at Kodiak; but the increasing scarcity of sea-otters in the Aleutian Islands, and the necessity of pursuing them farther south, led the then governor to lay the foundation of New Arkhangel, which has now become the capital. The Russian dominion, however, over the vast solitudes of this region is merely nominal,

Some of the tribes who live along the coasts, sell or barter furs with the Russians, and ackn the sovereignty of the empire; but most of them, as well as those in the interior, are quite i dent. We may even say that the greater part of the interior is quite unknown to the Russi possess merely some small establishments on the coast, and some posts surrounded with ditc palisades, which are dignified with the title of forts. *New Arkhangel*, the capital, situate on coast of Sitka Island, in N. lat. 57° 3', and W. long. 135° 13', is a town with about 1000 inhabita contains the boards and warehouses of the Company. The thermometer falls below 2° Fahr January and February, which are the coldest months; the mean temperature of these months 34°; in August it is 57° 7'. The Russians have also a settlement at *Bodega*, on the coast of Ca 38° 30' N. lat., where they cultivate a fertile tract which extends several miles inland. Th along the coasts, within the Russian limits, are:—*Queen Charlotte's Island*, *Prince of Wales Sitka*, *Admiralty*, *Kaye*, *Montagne*, *Kodiak*, and the long chain of the *Aleutian Islands*, whic from Alashka to Kamtschatka, a distance of about 600 miles, and consist apparently of the su a range of submarine volcanic mountains, several of which are in constant activity. *Behring' Attoo*, *Oonimack*, and *Oonalashka*, are the principal. Oonimack contains enormous volcan of which, *Chichaldinsk*, is about 9983 feet above the level of the sea. The volcano of *Makus* Oonalashka, rises to 5491 feet. All the islands present a barren aspect, with high and coni faces, which are covered with snow during great part of the year. Vegetation is scanty, a are no trees or plants larger than shrubs and bushes. The inhabitants are of a middle size, brown complexion, and apparently intermediate between the Mongolian and the America Their chief occupation used to be hunting sea-otters, sea-lions, and seals; but the unsparing u of these animals has now made them very scarce.

II. *BRITISH CONTINENTAL TERRITORY IN NORTH AMERICA.*

This region comprises the *Hudson's Bay Company's Territories*, *Canada*, *New Brunswick*, *Nova Scotia*, and *Honduras*.

The *Territory of the Hudson's Bay Company* includes *Labrador* and *East Maine*, on the east; *New North Wales* and *New South Wales*, on the west side of Hudson's Bay, with the interior c farther west as far as the Arctic and Pacific Oceans, and the Russian frontier. The western of this dreary country is intersected by numerous rivers, lakes, and marshes; the ground where barren and desolate; the sea is open only from the beginning of July till the end of Sep and, such is the severity of the climate, that even in 57° N. lat. the lakes freeze eight feet thick congeals; rocks split with a noise resembling that of the loudest artillery, and the shattered fr fly to an amazing distance. The weather is capricious, and the changes sudden. The aurora sometimes sheds a light equal to that of the full moon. There is great abundance of berry shrubs, and culinary herbs. In some places terebinthines are common, and other trees attai siderable size. On Red River different kinds of culture succeed well. Animals are somewha rous, as the buffalo, rein-deer, musk ox, fallow-deer, beaver, wolf, fox, catamount, wild ca black, and brown bears, wolverine, otter, racoon, musk rat, mink, pine-martin, ermine, po hare, various squirrels, and mice. The northern and eastern coasts are inhabited by M tribes of the Esquimaux family; the interior and southern portions, by aboriginal America all live by hunting and fishing, and by exchanging the produce with the European traders. trade of the region is carried on by the Hudson's Bay Company, whose head-quarters and p depot is *York Factory*, 5 miles above the mouth of Hayes River, in N. lat. 57° and W. long. The Company has nearly 1000 persons in its employment; and has formed a settlement on Re for the retired officers and servants.

Labrador is a triangular peninsula, bounded on the east by Davis' Straits; on the south, by and the gulf of St. Lawrence; and on the west, by Hudson's Bay. But it is as cold and barre countries above described; and is, besides, constantly enveloped in fogs. The interior, how somewhat milder than the coasts, and produces various trees, with celery, and other plants. face is a mass of mountains and rocks, interspersed with innumerable lakes and rivers, which with the best species of fish. The country swarms with beavers and rein-deer, and bears. The elder-duck and innumerable other birds frequent the eastern coasts. The Moravian l have established three settlements, at *Nain*, *Okkak*, and *Hoffenthal*; and, besides preaching th have taught the Esquimaux many of the useful arts of life, and thereby partially civilized al their influence.

§ 1. *Canada.*

SITUATION AND EXTENT.—This extensive region is situate between 42° a N. lat. and 61° and 81° W. long.; being about 1400 miles in length from west, and varying in breadth from 200 to 400. In 1791 it was divided into t provinces of Lower and Upper Canada, which have been again united, for legi purposes, in the present year (1841). Canada forms a long narrow tract of c extending south-westward from the sea, along both sides of the river St. Law as far as the 45° N. lat, and from the point where that parallel crosses the r stretches westward along the northern bank of the Cataraqui, and the northern of the lakes Ontario, Erie, Huron and Superior, including the peninsula form Lake Huron on the west, and Erie and Ontario on the south and south-east river Ottawa forms the common boundary between the two provinces throu greater part of its course.

GENERAL ASPECT.—Canada is intersected by mountainous ridges, which from the coast far into the interior, and between these lie extensive valleys, are generally fertile. On the northern shore of the St. Lawrence a ridge of l rises near the eastern extremity of Lower Canada, which stretches close to th for upwards of 100 miles, and forms its rugged banks as far as Cape Tourment, thirty miles below Quebec. Here the ridge, taking a direction west-south-we minates on the river Ottawa, about thirty-eight leagues above its confluenc

the St. Lawrence, after extending from Cape Tourment along the course of the river about 300 miles. The tract of country lying between it and the St. Lawrence, which may be estimated at from fifteen to thirty miles in breadth, is beautifully picturesque, well watered, and level. Towards the west, more especially, it may be considered, in respect of population, soil, and skilful cultivation, as the choicest part of the province.

That part of Canada which lies on the north side of this ridge is comprehended within the Ottawa river on the north-west, the 81st parallel of west longitude, and the 52d of north latitude. It is intersected by another and higher range of mountains, which runs into the interior in a north-west direction, at the distance of about 200 miles from the former ridge, and which forms the watershed by which the tributary streams of the St. Lawrence are divided from those that fall into Hudson's Bay. Of this extensive wilderness, which has been but imperfectly explored, we know only that it is covered with immense forests, whose dreary solitudes are interrupted merely by hunting parties of wandering savages.

On the south side of the St. Lawrence, a ridge commences nearly 100 miles below Quebec, which takes a south-west direction; and opposite to this city, is about ten leagues distant from the river. The intervening country is a fertile and well-cultivated level, with several insulated hills, or rather rocks, of a singular form, and thinly covered with small trees near their summits. The same chain, continuing in a south-west direction, crosses the boundary line between Canada and the United States to the west of Lake Memphremagog, and proceeds in the same course until it meets with the Hudson river. The tract between this ridge and the St. Lawrence, with the exception of some occasional ridges, is nearly level, and, from the richness of its soil, is covered with populous and flourishing settlements.

Beyond this ridge, at the distance of about fifty miles, is another and a higher range, generally denominated the Land's Height, because it divides the tributary streams of the St Lawrence from those which flow towards the Atlantic Ocean; and its summit is also supposed to constitute the boundary line between the territories of Great Britain and the United States. This range of mountains commences near Cape Rosier, in the Gulf of St. Lawrence, and, stretching into the interior in a direction nearly parallel with the course of the river, and with the former chain, terminates on the eastern branch of the Connecticut river, being in length nearly 400 miles. The country lying between these two ridges varies in its quality and fertility, according to its peculiar situation. From the 45th degree of north latitude, which is the boundary line between Canada and the United States, to the river Chaudiere, within a few miles of Quebec, there is a tract of excellent and fertile land, divided mostly into townships, many of which are occupied and under cultivation. This part of the country, from its luxuriant soil, and from the great advantage of being contiguous to the United States, and also from containing the main roads and principal points of communication between the two territories, will probably become the most flourishing portion of the province. From the river Chaudiere eastward to Lake Temiscouata the land is broken, irregular, and of an indifferent quality, interspersed, however, with some good and productive tracts, of which the returns would amply repay the expenses of cultivation. From Lake Temiscouata eastward to Cape Rosier, in the Gulf of St. Lawrence, the country has been but partially explored. But it appears generally to be of a rugged and mountainous character; and such parts of it as are known present an appearance of sterility which holds out no encouragement to the labours of the farmer. On the banks of the St. Lawrence, however, some fertile spots are to be found, on which settlements might be established with advantage. On the south side of the ridge, down to the shores of Gaspé and Chaleurs Bay, the country is generally barren and mountainous, interspersed with occasional spots of excellent land, some of which, especially those on the shores of Chaleurs Bay, are well inhabited. They contain about 3000 inhabitants, most of whom, being employed in the fisheries, bestow comparatively little attention on agriculture.

That portion of Upper Canada which has been laid out into townships extends from the eastern frontier along the northern shore of the river St. Lawrence, Lake Ontario, Lake Erie, Lake St. Clair, and the communication between it and Lake Huron, in length about 570 miles; and its breadth towards the north varies from 40 to 50 miles. Throughout the whole of this tract the soil is excellent, and is not exceeded in fertility by any other part of the American continent. It generally consists of a fine dark loam, mixed with a rich vegetable mould; but it is so happily varied as to present situations adapted to every species of produce. For about 170 miles from

the eastern frontier of the province, to the head of the Bay of Quinté, on Lake On the land is spread out into an almost uniform level of great beauty, which rises a few feet from the bank of the St. Lawrence. It is well watered in almost e direction by numerous streams, which are generally navigable for boats and ca and which, at the same time, present the most desirable situations for the erecti machinery. From the Bay of Quinté, at the distance of about 40 miles from eastern shores of Lake Ontario, to its western extremity, runs a longitudinal r of no great elevation, and of inconsiderable breadth. Another ridge, called Queenstown Heights, extends from this point eastward along the southern shor Lake Ontario, between these and Lake Erie, into the State of New York. range never rises in any part more than 160 yards above the level of the lake country which lies between the two lakes of Ontario and Erie, and which ext round the western extremity of Lake Ontario to the Bay of Quinté, comprehen the Newcastle, the Home, and the Niagara districts, is watered by a number of l and small streams. The land throughout is uncommonly rich and fertile, and alr contains a number of flourishing settlements. A road leads from Toronto, near western extremity of Lake Ontario, and the capital of Upper Canada, to Lake Sim which is 40 miles long and 12 broad; and along this road a great number of emigr have been settled.

The remaining part of the tract we have been describing, which extends along northern shores of Lake Erie, from the river Ouse to the lake and river of St. C is an uninterrupted level, abounding in the most advantageous situations for se ments; and those portions of it which are already occupied and under tillage equal part of either province in the plentiful crops and thriving farms with which they abo That portion of the country which lies between Lake Erie and Lake St. Clair is haps the most delightful in the whole province. The fertility of the soil, the div fied and luxuriant scene which everywhere opens to the view, the excellent fish w abound in the rivers, and the profusion of game to be found in the woods, combir attract a continual supply of new settlers to this highly favoured tract.

Climate.—In Canada, the oppo-ite extremes of heat and cold are felt in all t excess. The greatest heat experienced during the summer is from 96° to 10 Fahrenheit in the shade; but the usual summer heat is about 80° or 82°. In wi the thermometer is sometimes 60° of Fahrenheit below the freezing point, alth it never continues above one or two days so low; and it is not above one twice in a season that this excessive cold is felt. In the winter of 1780 mercury was frozen at Quebec. The medium temperature of winter may be mated in general to be from 20° above to 25° below zero. The pure atmosphere cloudless sky which always accompany this intense frost make it both pleasant healthy, and render its effects on the human body much less severe than when atmosphere is loaded with vapours. In the vicinity of the sea, towards the eas coast of Lower Canada, fogs are frequently brought from the Gulf of St. Law by the easterly wind; but to the westward they seldom prevail, and even at Qu they are almost unknown. In Canada, the spring, summer, and autumn are com bended in five months, from May till September; the rest of the year may be to consist wholly of winter. In October frost begins to be felt, although during day the rays of the sun still keep the weather tolerably warm. In the succee month of November the frost increases in rigour, and one snow-storm succeeds other until the whole face of the country is covered, and the eye looks in vain for solitary spot of verdure whereon to rest. These storms are generally accompa by a violent wind, which, driving along the snow with immense velocity, ren them much more gloomy and terrific. The most severe snow-storms occur in vember, and generally come from the north-east, from the frozen regions of Hud Bay and Labrador. This gloomy and disagreeable weather frequently continues the middle or latter end of December, when the atmosphere clears; an intense then succeeds, the sky becomes serene, pure, and frosty, and of a bright azure and this cold and clear weather generally lasts till May. The snow covers the gro to the depth of several feet, so that wheel-carriages can no longer be used. T place is supplied by *carioles*, a sort of sledges, which, being placed on iron-runn resembling in form the irons of a pair of skaits, pass over the hardened snow with sinking deep. These carriages are generally light open vehicles, drawn by one ho to which the snow, after it is trodden for some time, and hardened by the frost, o very little resistance; and in them the Canadians travel in the most agreeable man and with inconceivable rapidity. So light is the draught, that the same horse go in one day eighty, and sometimes ninety miles; and the inhabitants of this

climate always take advantage of the winter, when they can trave. so easily and expeditiously, to visit their friends who live at a distance. Covered *carioles* are sometimes used to protect the travellers from the weather; but, in general, open carriages are preferred.

About the beginning of December all the small rivers are completely frozen over and covered with snow. Even the great river St. Lawrence is arrested in its course, and from the beginning of December till the middle of April the navigable communication is interrupted by the frost. During this period the river from Quebec to Kingston, and between the great lakes, except the Niagara falls and rapids, is wholly frozen over. The great lakes are never entirely covered with ice; but the ice usually shuts up all the bays and inlets, and extends many miles towards the centre of these inland seas. In Lake Superior, which is farthest to the north, the ice extends 70 miles from the shore. The river is seldom frozen over below Quebec; but the force of the tides is continually detaching the ice from its shores, and these immense masses are kept in such constant agitation that navigation is rendered quite impracticable. In some seasons, though rarely, the river is frozen completely over below Quebec; an event which happens when large masses of ice come in contact, and fill the whole space between the opposite banks, in consequence of which the whole becomes stationary. If this takes place at neap tides, and in calm weather, the intense frost gives it solidity before it can be deranged by the rising tides; and when it has stood for some days, it remains firm and immovable, till it is dissolved and broken up by the warmth of the April sun. When the river is frozen over, it is of great advantage both to the inhabitants of Quebec and to those of the adjacent country, as it affords an easy mode of transporting into the town all sorts of bulky commodities, such as fire-wood and other produce. It thus reduces the price of these necessary articles in Quebec, while, by diminishing the price of carriage, it opens to the produce of the most distant parts of the country a quick and easy access to all the most eligible markets.

The snow begins to melt in April, and the thaw is so rapid that it generally disappears by the end of the second or third week. Vegetation then resumes its suspended powers; the fields are clothed with verdure, and spring can scarcely be said to exist before summer arrives. In Upper Canada the winters are much shorter than in Lower Canada, and the cold is not so intense. The spring opens, and the labours of the farmer commence six weeks or two months earlier than in the neighbourhood of Quebec. The climate is not liable to the same extremes either of heat or cold, and the weather in autumn is usually favourable for securing all the late crops.

NATURAL PRODUCTIONS. — The greater portion of Canada is still covered with forests. The pine family and various species of evergreens are the predominant species; but there are also various other kinds, as the silver and American firs, Weymouth and Canadian pines, white cedar, maple, birch, ash, bass-wood, hickory, wild cherry, and numerous species of oak. From the sap of the maple, as it rises in spring, sugar is made in considerable quantity; the districts that produce it are called sugaries, and are considered a valuable kind of property. Most of the oaks are unfit for ship-building; but the species called the live-oak, which grows in the warmer part of the country, is said to be well adapted for this purpose. The various kinds of wood, which are available for no other purpose, serve to supply the pot and pearl ash manufactories. Tobacco, hemp, and flax, the different kinds of grain and pulse, are successfully cultivated; and likewise all the common fruits and vegetables of England. Melons of various kinds abound, and are probably native; also the strawberry and raspberry, the latter of which grows luxuriantly in the woods. Pears and apples succeed well, both at Quebec and Montreal; and, on the shores of Lake Erie, the grape, the peach, and the nectarine, as well as all the hardier kinds of fruit, arrive at the greatest perfection. Among the wild animals are the American elk, fallow-deer, bear, wolf, fox, wild cat, racoon, martin, otter, various species of the ferret and weazel, the beaver, hare, grey and red squirrel; and in the more southern parts, the buffalo and the roebuck. Bears usually hybernate, if the season has enabled them to acquire sufficient fat; if not, they travel southward. Beeves, sheep, swine, and other domestic animals, multiply with astonishing rapidity, and seem to improve by transportation to America. Among the birds may be noticed the wild pigeon, quail, partridge, grouse of various kinds, and numerous aquatic birds. One kind of humming-bird is indigenous, and may be seen in the Quebec gardens. Fish in great variety and abundance are found in the lakes and rivers; the sturgeon is common, and the salmon and herring fisheries are considerable; seals are also met with occasionally in large shoals, in the lower part of the St. Lawrence. Fish-oil is becoming an extensive article of export,

as well as hides and horns. The rattlesnake is also occasionally met wi
does not seem to be rich in minerals; but iron abounds in some distric
argentiferous lead have been met with at St. Paul's bay, 80 miles bel
and coals, salt, and sulphur, are known to exist in the country.

PEOPLE.—The greater part of the population of Lower Canada is of
gin; in 1831 the French inhabitants exceeded 400,000. They are frugal
dustrious, and hospitable; but cling tenaciously to old customs and preju
retain indeed all the characteristics of the old French, and present the sp
old, uneducated, stationary society, in the midst of a new and rapidly-adv
try. A few families possess large properties; but among the great mass of
as they are called, there is an almost uniform equality of condition, proper
rance. They are a hard-working people; and but very few of them can r
At the colleges and schools between 200 and 300 annually finish their ed
are dispersed throughout the community, chiefly as notaries and surgeons;
possess great influence over their uneducated neighbours; and generally tak
all public matters. The rest of the population is chiefly of British origin,
termixture of a few foreigners; and to them is owing the great develop
productive resources of the colony. Their number is constantly increasi
gration from Europe; in the nine years ending 1838, the number of
amounted to 263,089; but of these more than a half subsequently proc
United States. Native Indians still occupy portions of territory along
Huron and Superior, and along the whole extent of the northern bou
their number is rapidly diminishing; and little or no success has attended
efforts made to introduce civilization among them and to improve their c

About 1-38th part of the area of the province is estimated to be und
of cultivation, and is divided into townships, or signories. The latter wer
the French Government in favour of certain leading persons, who were bo
or 'concede' a portion to any applicant; the seigneur's profit being d
payment of a small rent, or from astricted services of the tenant; from
of the corn ground at the seignorial mill; and from a fine on the transfe
property otherwise than by inheritance. To this system it is owing that
population has been confined to a comparatively small extent of territo
never amalgamated with the British; for by its enabling every person
portion of land without any immediate outlay, young men were tempted
home; and being subject to feudal regulations and services, the occupiers
to a routine system of cultivation. Hence, the French Canadians exhibi
want of activity and enterprise; and their portion of the province has
poor population, strongly attached to ancient habits. Under British
methods of granting land have been practised; but it is now all disposed o
sales, at which the price is instantly payable.

With respect to religion, the French colonists are all Catholics; thei
numerous, and are under the spiritual jurisdiction of the Bishop of Quebec,
by Government. The Catholics have also a few female monastic establis
several public schools and colleges, where not only their clergy, but also
numbers of the *habitans* are educated. There is likewise an English Bisho
appointed by the Crown, with an archdeacon and clergymen in Lower Cana
archdeacons and forty clergymen in Upper Canada. Episcopacy, however
prevalent form of church government; there are a great many Protestant
who have places of worship and ministers in various parts of the province. T
of the Church of Scotland are paid partly by Government, and partly by t
gations; the other sects support their own clergy. The system, and t
elementary education throughout the colony are still very imperfect.
Catholics have several endowed academic seminaries; but there exists
college education for Protestants in Lower Canada, so that many young
nually drawn, for that purpose, into the United States; but in Upper C
is a college and royal grammar school at Toronto, with upwards of 100
college also for the education of ministers of the Church of Scotland is in
of being established at Kingston, under the patronage, and with the assist
General Assembly of the Church of Scotland; and, no doubt, the lite
of the institution will be made available for lay pupils.

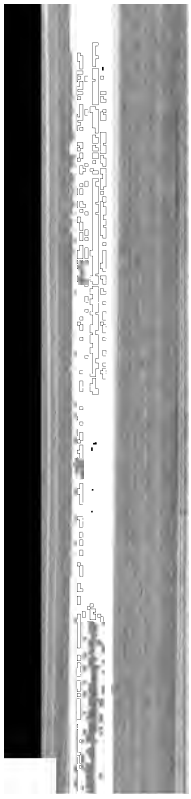
GOVERNMENT. — The government of both provinces is vested in a gov
ral appointed by the Crown, and assisted by a council. Formerly there
lative assembly for each province; but, by an act of the British parliament,
been united into one assembly, which meets at Kingston in Upper Canad

ministrative purposes the country is divided into districts, which are subdivided into counties, parishes, and townships. Each district has its own judges, subject to the general court of appeal; a sheriff, and a grand voyer, or inspector of the roads, whose duty it is to open new roads, and to see the established roads kept in repair. The legislative assembly has the exclusive right of raising money for the internal expenses of the colony.

COMMERCE.—The trade of Canada, from the period of its conquest by Great Britain, was regulated by the strict maxims of colonial monopoly. The St. Lawrence was rigidly closed against the entrance of all foreign vessels, nor was any Canadian vessel allowed to enter a foreign port. But the prosperity of the colony during its infancy was not materially obstructed by these restrictions, as the mother country offered at all times an ample and advantageous outlet for its surplus produce. After the United States achieved their independence, their vessels were excluded from the ports of the British colonies; and Canada was rewarded for its loyalty by the exclusive privilege of supplying the West India islands with lumber, and provisions, namely wheat, flour, biscuits, beef, pork, &c. In this manner, as the colony was originally injured for the supposed advantage of the mother country, one colony was by this enactment injured in order to benefit another. The neighbouring country of America is the natural resort of the West Indies for lumber and provisions. The voyage from New York or New Orleans to Jamaica is not more than 1000 or 600 miles, while from Quebec or Montreal the distance must be above 2000 miles; the freight of lumber and provisions, which forms a great part of the expense, must be greatly enhanced by the length of the voyage from Quebec, and still more if the articles are shipped from the United States to Canada, and thence re-shipped for the West Indies. The effect of this regulation therefore is greatly to raise the price of these necessary articles to the West India planter, to increase the expenses of sugar cultivation, and to lay the proprietors of Jamaica under contribution for the profit of the Canadian husbandman or wood-cutter. The annual expense of these restrictions to the West India planters is estimated by themselves at £1,392,353, which is, according to the same estimate, 5s. 6¾d. of additional cost on every hundredweight of sugar; and thus the wisdom of monopoly cannot compass, nor does it indeed aim at, any higher end than to benefit one part of the empire by injuring another. By 3 and 6 Geo. IV., these regulations were so far relaxed that the wheat and lumber of the United States were allowed to be imported directly into the West India islands on payment of certain duties; and an act which was passed in 1831 repealed all the import duties on provisions and lumber imported from the United States into the Canadas, and gave to these colonies all the advantages of a free trade. It does not appear, however, that the Canadas ever possessed a sufficient supply of lumber and provisions for the demands of the West India islands. The natural intercourse between the West Indies and the United States was indeed greatly interrupted by these restrictions, and the countervailing restrictions of the United States. Still considerable supplies have always been imported from the latter country. Of late years, indeed, owing partly to the retaliation of America, the trade was occasionally obstructed, and large supplies of lumber and provisions were received from Canada, to the benefit of the wood-cutters and husbandmen of that country, and to the proportional injury of the West India planter.

With a view also to the improvement of her colonies, the mother country consented to sacrifice an important branch of her own trade with the north of Europe. Her commerce with those countries, namely, Russia, Norway, Sweden, and Denmark, consisted in the exchange of her manufactures for their rude produce; and among her imports from Norway, Sweden, and the countries contiguous to the Baltic, timber was a staple article. The exchange was conducted on fair and liberal principles; it was mutually advantageous to both countries, and gave rise to an extensive and flourishing trade, which employed about 428,000 tons of British shipping. In 1809 the duties on timber imported from our North American colonies were entirely repealed; while the duties on timber imported from the north of Europe were largely increased, and, by successive additions, were raised to £3: 5s. per load. The repeal of this duty greatly augmented the importation of Canadian timber, and the general trade of the colony with great Britain.

But this extension of the colonial trade was purchased by the sacrifice of the timber trade with the north of Europe, which now almost entirely ceased, under the withering influence of prohibitory duties. Canada profited exactly in proportion as Great Britain was injured. For the supposed benefit of the colony, the mother country was compelled to buy the inferior timber of a distant province at a high price,



the colony advances in population and in wealth, cultivation is s
wastes; there is a great demand for labour, and ample means for
classes of the community enjoy ease and comfort. But there wou
labour, nor any high wages, unless the fund for paying these wa
procured; for no one would seek to purchase if he had not the
price; and hence it is evident that agriculture, by providing the fu
labour, namely, a surplus supply of subsistence, is the spring of all
that, the more abundantly its produce increases, the greater wil
inhabitants, and the more rapidly will the colony advance in wealt
this view, then, the undue encouragement given by the British
wood trade of the Canadas, by diverting the industry of the co
ture to less beneficial objects, is calculated to retard the growth
to render it less rich and populous than it would have been un
liberal policy. The clearing of the country is not aided, as mi
posed, by the efforts of the Canadian wood-cutter or lumberer. I
and the finest trees which he selects, and not one in a thousand i
to his purpose; while it is the practice of the farmer who clears t
tion to consume all the trees on the spot. The author of the *Sk*
Upper Canada (the Backwoodsman), though he argues strongl
existing monopoly, states, among the other pernicious effects of
draws the cultivators from their legitimate occupations, and make
certainty of earning a competence by a steady perseverance in the
suits, for a vision of wealth never to be realised." Mr. Macgrego
able work on the British colonies, though he is decidedly in favou
portation of timber from Canada, observes that "the trees cut d
of commerce are not of the smallest importance in respect to cle
though I have heard it urged in England as an argument in fav
trade." In another part of his work, which treats of Prince Edwa
serves: "The timber trade has been for many years of some i
ploying a number of ships and men; but as regards the prosperit
must be considered rather as an impediment to its improvement
by diverting the inhabitants from agriculture, demoralizing their h
enabling them to procure ardent spirits with little difficulty, whic
stances has led to drunkenness, poverty, and loss of health." It is
that in all cases where the new settlers have been diverted from
timber trade, the fisheries, or any other object, the progress of t
retarded, just as the Portuguese and Spanish colonies in Brazil a
poverished by the mining speculations of the early settlers. Agri

at this season is extremely cold, yet he is day after day wet up to the middle, from the time that the floating commences till the timber is delivered to the merchants, which seldom occupies less than a month or six weeks. This constant immersion of the body in snow-water undermines the constitution, occasions severe rheumatism and other disorders, and at last brings on general debility and premature old age. In no view, therefore, in which it can be considered is this trade deserving of any special favour.

Furs have been a staple article of the Canadian trade from the first settlement of the colony. These were originally procured from the Indians by the *coureurs des bois*, who penetrated into the remote wilds of the interior, in exchange for shot, brandy, red cloths, knives, hatchets, trinkets, and a few other articles of European manufacture, and were brought to Three Rivers and Montreal. The French afterwards carried on the trade by means of licences granted to a limited number of gentlemen and old officers, any interference with whose privileges was forbidden on pain of death. From twenty to thirty canoes, each carrying from six to seven men, were employed in procuring supplies; and they were usually accompanied in their return by fifty or more canoes of Hurons and Ottawais, who descended to Montreal, for the purpose of selling their cargoes to more advantage than at Michilimakinnak. The fur traders are exposed to many perils and hardships. It is only in bleak, wild, and snowy deserts, which abound in animals requiring a thick covering to protect them from the inclemency of the seasons, that furs of any value are to be found; and the trader has to brave the dangers of savage tribes, inland seas, deep and trackless forests, cataracts, and rapids. He has to make his way through the ice and the snows of winter, and amid every species of annoyance in summer from the attacks of mosquitoes and other varieties of tormenting insects. All these hardships, however, are voluntarily endured by private adventurers, by whom, after the conquest of Canada, the fur trade was carried on, aided by the *coureurs des bois*. Among these rude adventurers in the interior of the desert, and beyond the reach of legal authority, jealousies and quarrels, followed by scenes of violence, frequently took place, till they were at length associated, by the exertions of the late Sir Alexander Mackenzie, and formed into the famous North West Fur Company of Montreal. By this company the fur trade has been prosecuted with extraordinary vigour; and a spirit of enterprise has been infused into its numerous servants, under the influence of which they have surmounted fatigue and danger, and penetrated into the remotest extremities of the continent. The American expedition of Captains Lewis and Clerk, who ascended the Mississippi, and, crossing the Rocky Mountains, penetrated to the Pacific Ocean, has been already fully detailed by these enterprising travellers. Since this period the bold adventurers of the North West Company, eagerly embracing every opportunity to extend their trade, have established a line of stations or forts from Canada to the mouth of the Columbia river on the Pacific Ocean. There is from Canada, in a north-west direction, an imperfect water communication for about 1590 miles into the American wilderness to Cumberland House, a fort and storehouse of the North West Company. This communication is carried on from the St. Lawrence, through the great Lakes Erie, Huron, Superior, the Lake of the Woods, Winnipeg Lake, and by intermediate rivers, occasionally interrupted by rapids, through which the light craft employed in the service are pushed by the unrivalled skill and courage of the Canadian boatmen, and by cataracts, past which the boats must be carried for several miles. At Cumberland House the river Athapescow, descending from the Rocky Mountains, runs into one of this series of lakes. This river is ascended to its source in small boats; and a land journey across the great mountain barrier which separates the streams that flow westward into the Pacific from those that flow eastward into the Atlantic Ocean, brings the travellers to the sources of the Columbia, on which they embark, and descend the stream to its mouth in the Pacific Ocean. In this perilous journey, of from 4000 to 5000 miles, they are exposed to many accidents in travelling between the distant stations of the company, and frequently encounter the hostility of the savage tribes scattered over the desert. Courage, calmness, and presence of mind, are qualities which are greatly in request among the traders. They always carry with them the formidable rifle, with which they take a certain and deadly aim, depending on it as they do both for safety and for food. They are thus equally prepared to trade or to fight with their savage customers, and to pay them for their furs either in gold or lead. After Lord Selkirk established his colony on Red River, to which, from the beginning, the North West Company showed an inveterate hostility, long, obstinate, and bloody contests took place between these rival traders. Regular hostilities were carried on, lives were lost and prisoners taken; and

in one encounter in the desert, far beyond the limits of legal authority twenty or thirty of Lord Selkirk's men lost their lives. This violent o was terminated in 1821, by the coalition of the rival companies, namely, son's Bay and the North West Company.

The foreign trade of Canada is carried on through the ports of Quebec, St. John's, Coteau-du-lac, and Stanfield. The principal articles of export timber and ashes; the imports are coal, metals, cordage, East India produce, ous kinds of British manufacture from Europe; sugar, molasses, rum, coffee, woods from the British West Indies; with beef, pork, biscuit, rice, and toba the United States The total value of the imports for the year 1836, was £1, and that of the exports, £1,034,514. There are small manufactories of differen at Montreal and Quebec; and soap and candles are now exported. A cloth tory has been established in the township of Ascot; the number of looms Canada is supposed to be about 13,500, which produce annually 1,500,000 coarse cloth, 900,000 yards of flannel, and 1,370,000 yards of linen. Iron-w carried on to a very great extent at St. Maurice, in the district of Three there is one iron-foundry in the district of Quebec, and six in that of Montr

INTERNAL COMMUNICATIONS.—The roads are generally very bad, and the communication very incomplete. The St. Lawrence, however, and the lak the most ample means of transport during summer, when they are clear of in winter, travelling is performed in sledges, which pass with great expedit the frozen snow. The falls and rapids of the St. Lawrence have been avoided cuts (See *anté*, RIVERS); but, to make the communication more complete and two extensive lines of inland navigation have been executed. The *Rideau C* tends from Bytown, on the Ottawa, to Kingston, on Lake Erie, a distanc miles, of which, however, only 20 consist of excavation, the rest being natur nels or slack water produced by dams. It has been executed at the expens British Government, and cost little less than £1,000,000 sterling. The *Canal* extends from the south-western part of Lake Ontario to Port Matl Lake Erie, a distance of 42 miles. By means of the latter the insuperable Niagara are avoided. The communication is large enough for vessels of 125 t has been executed by a public company, at the cost of more than £500,000.

DIVISIONS.—As already mentioned, Canada is divided into two provinces Upper and Lower. Lower Canada is divided into the four districts of *Montreal*, *Three Rivers*, and *Gaspé*; Upper Canada is divided into eleven named *Home*, *Gore*, *Niagara*, *London*, *Western*, *Eastern*, *Johnston*, *Ottawa*, *B Newcastle*, *Midland*. These are subdivided into counties, the areas and popul which, as in 1840, are stated in the following tables: —

I. UPPER CANADA.

Counties.	*Area in Square Miles.*	*Popula-tion.*	*Counties.*	*Area in Square Miles.*	*P... tion*
York,	1904	60,056	Hastings,	1314	11,3
Halton,	1023	35,216	Stormont,	392	10,8
Lincoln,	658	25,544	Simcoe,	3034	9,8
Middlesex,	1898	23,711	Lanark,	964	8,8
Northumberland,	1721	20,059	Norfolk,	600	8,4
Leeds,	968	18,484	Essex,	665	8,4
Durham,	1380	15,946	Kent,	1940	8,4
Wentworth,	310	15,106	Dundas,	377	6,5
Carleton,	859	14,886	Prescott,	442	5,4
Grenville,	678	13,593	Haldimand,	467	4,5
Lennox & Addington,	722	13,579	Huron,	1281	2,5
Prince Edward,	344	14,212	Russell,	641	2,3
Oxford,	897	12,537			
Frontenac,	1393	12,451	Total,	27,832	334,9
Glengarry,	450	12,094			
			Unsettled,	124,000	

II. LOWER CANADA.

Counties.	Area in Square Miles.	Population.	Counties.	Area in Square Miles.	Population.
Saguenay, (a)	72,000	8,385	Missisquoi,	363	8,801
Montmorency, (a)	7,396	3,743	Stanstead,	632	10,306
Orleans,	69	4,349	Shefford,	749	5,087
Quebec, (a)	13,200	10,257	Sherbrooke,	2,786	7,104
Portneuf, (a)	8,640	12,350	Drummond,	1,674	3,566
Champlain, (a)	783	6,991	Yamaska,	283	9,496
St. Maurice, (a)	9,810	12,909	Nicolet,	475	12,504
Berthier, (a)	5,760	20,255	Lothiniere,	735	9,191
L'Assumption,	208	12,767	Megantic,	1,465	2,283
La Chesnaye,	299	9,461	Dorchester,	342	11,928
Terrebonne,	3,100	16,623	Beauce,	1,987	11,900
Two Mountains,	979	20,905	Bellechasse,	581	13,529
Ottaway, (a)	34,669	4,786	L'Islet,	3,034	13,518
Vaudreuil,	316	13,111	Kamouraska,	4,328	14,557
Beauharnois,	710	16,857	Remouski,	8,840	10,061
L'Acadie,	242	11,419	Gaspé,	3,188	5,003
La Prairie,	239	18,497	Bonaventure,	4,108	8,109
Montreal,	194	4,486	Town of Montreal,	..	27,297
Chambly,	211	15,483	„ „ Quebec,	..	25,916
Vercheres,	192	12,319	„ „ Three Rivers,	..	4,000
Richelieu,	367	14,149	„ „ Wm. Henry,	..	2,000
St. Hyacinthe,	477	15,366			
Rouville,	384	18,115		194,815	499,739

The counties marked *a* extend indefinitely north, but, except near the river, are almost unfit for settlement.

In Upper Canada, the unsettled territory consists of about 120,000 square miles, and in Lower Canada, of 7174; the total area of both provinces is about 355,000 square English miles.

Cities and Towns.

QUEBEC, the capital of Lower Canada, is situate partly on a bold headland rising 350 feet above the left bank of the St. Lawrence, between it and the River St. Charles, and partly on the narrow margin of the river, below the rock. The principal part of the upper town is inclosed with fortifications which are considered to be impregnable, and the summit of Cape Diamond is crowned by the citadel, a very strong fortress. Population in 1840, 25,916. The Hotel Dieu, or General Hospital, the Roman Catholic and Protestant Episcopal Cathedrals, the Jesuits Barracks, the Parliament House, and the obelisk erected to the memory of Wolf and Montcalm, are the principal objects of interest. Quebec is situate in N. lat. 46° 48′, and W. long. 70° 72′, 420 miles from the Gulf of St. Lawrence; and is accessible to the largest ships. *Montreal*, situate on an island of the same name, at the mouth of the Ottawa, is prettily placed at the foot of a hill which commands a delightful prospect. Population in 1840, 27,297. It is accessible for large ships, though 600 miles from the Gulf, and its trade is very extensive. The Roman Catholic Cathedral is a very fine building, capable of containing 12,000 people; and some of the convents and hospitals are striking objects. The island is a beautiful oval-shaped tract, 32 miles long, by 10 broad, with an almost level surface, there being only one hill of considerable elevation, and one or two of smaller dimensions. It forms one seignory belonging to the Catholic clergy. *Lachine*, a village nine miles above Montreal, owes its prosperity to the rapids below, which have made it the landing and shipping place for goods passing between Montreal and the upper country; some part of the trade, however, is carried past it by boats through the Lachine Canal. *Coteau-du-lac*, at the foot of Lake St. Francis, and above the Cedar rapids, owes its rise to similar circumstances. *La Prairie*, on the south side of the St. Lawrence, a few miles above Montreal, is the great thoroughfare of traffic between that city and the United States. A railroad, 15 miles in length, connects it with St. John, on the Richelieu, at the foot of the navigation for lake vessels. At *Chambly*, below St. John, there is a strong British military post. *Sorel* or *William-Henry*, at the mouth of the Richelieu, is a less considerable town than might be expected in such a situation. Its population is only 2000. There are a military post and garrison on *Isle aux Noix*, above St. John. The banks of the river between Montreal and Quebec, are lined with numerous pretty villages, which are rendered conspicuous by their large stone churches, with shining tin-covered roofs and spires. But there is no place of much importance except the town of *Three Rivers*, at the mouth of the St. Maurice, on its left bank, which is a place of some trade and mechanical industry, and has a population of 4000. Below Quebec the settlements are few, and consist generally of fishing villages. In the Saguenay country, and the Domain, the only white occupants are found at the trading stations of the King's Posts Company, which possesses the exclusive privilege of taking furs and fish in this quarter. *Stanstead*, with 1200 inhabitants, and *Sherbrooke*, with 800, are the principal towns of the *Eastern Townships*, a tract of 6,000,000 acres, behind the French seignorial settlements, on the borders of New Hampshire and Vermont; and which, during the last few years, have been colonized by upwards of 50,000 British and American immigrants. There are also some thriving little towns on the left bank of the Ottawa, in Lower Canada, where the lumber trade is actively carried on. *Hull*, opposite Bytown, with which it is connected by a chain of remarkable bridges across the falls, is the principal; its population is about 1500.

TORONTO (late YORK) the capital of Upper Canada, contains about 12,000 inhabitants, and occupies a good situation on a fine bay of Lake Ontario, which affords access to vessels drawing 15 feet water, and is sheltered by a low, circular, sandy, peninsula opposite the town. *Kingston*, with 5000 inhabitants, is very advantageously situate at the head of the Cataraqui river, and of the Rideau canal, on the site of the old French fort *Frontenac*. The harbour is well sheltered, convenient, and accessible to ships of 18 feet draught, and contains the royal naval station on the lake. The entrance is strongly fortified. *Port Hope* and *Cobourg* are thriving towns between Toronto and Kingston, but occupy exposed situations on the shore of the lake. *Brockville*, *Prescott*, and *Cornwall*, are considerable towns on the St. Lawrence, with populations of from 1200 to 1500. Prescott is situate at the foot of the navigation for large vessels and steamers; but small steamers ply in the river between it and Coteau-du-lac, passing the Long-Sault rapids above Cornwall by means of a canal. *Bytown*, at the mouth of the Rideau river, on the right bank of the Ottawa, is a thriving town with 1500 inhabitants.

Perth is an increasing town, about midway between the Ottawa and Lake Ontario, and is c with the Rideau canal by a lateral cut of 11 miles. *Hamilton*, at the head of Lake Ontario, l risen into importance, in consequence of the rapid occupation of the fertile country to the w At the mouth of the Niagara is the town of *Niagara*, formerly called *Newark*, which ha harbour and an active trade, though the Welland canal diverts some of its business. *Qu* stands on the Niagara, at the foot of the ridge through which the river has cut its deep Here a battle was fought in 1812, and a monumental pillar subsequently erected to the memo British general Brock, who fell in the action; but some miscreant has lately almost destro blowing out its inside with gunpowder. The other principal places worthy of notice in U nada, are: *Chippeway*, a village above the falls; *Fort Erie*, opposite Buffalo; *Sherbrooke*, at t of the Ouse, on lake Erie; *Victoria*, *Charlotteville*, and *Fort Norfolk*, on or near the bay form Long Point in Lake Erie; *Amherstburg*, at the mouth of the Detroit, with a good harbour litary post; *Sandwich*, opposite the city of Detroit; *Goderich*, on the eastern coast of Lak *Chatham* and *London*, on the river Thames, which flows through a very fertile country into Clair; and *Guelph*, 45 miles W. of Toronto. There is also a fort, garrison, and naval st *Penetanguishene*, on Gloster bay, at the south-east extremity of the Georgian bay of Lake Hu

§ 2. *New Brunswick.*

This province consists of a compact territory of 27,700 square miles; bounded on the nort Bay of Chaleurs and the river Restigouche: on the south by the Bay of Fundy; on the eas Gulf of St. Lawrence; and on the west by Lower Canada and the State of Maine. The fa country is in general pretty level, or moderately undulating, but it is diversified by several groups of hills, particularly in the northern part. It is profusely watered by rivers, which f form fine navigable streams. The province is divided into ten counties, which are subdivi townships. The population, amounting to about 130,000, is chiefly concentrated on the Fundy, the lower part of St. John's river, and the section between it and the St. Croix. Th fish are the staple articles of export; to which may be added some ashes and agricultural The total value of the exports is about £400,000; that of the imports, £600,000. *Fredericton*, th is situate at the head of sloop navigation on the St. John's, 85 miles from the sea. Populat *St. Andrews*, on Passamaquoddy bay, is favourably situated for trade, and contains about 5 bitants. The city of *St. John's*, at the mouth of the river, contains about 8000 inhabitants. *N* and *Chatham*, on the *Miramichi* river, will probably become important centres of trade, w country in the interior is more fully occupied. *Dalhousie*, a rising town at the western extr the fine *Bay of Chaleurs*. *Bathurst*, on a bay of the same name, on the south side of the Bay lours. *Liverpool*, on *Richibucto harbour*, on the east coast.

§ 3. *Nova Scotia and Cape Breton.*

This province comprises the peninsula of Nova Scotia and the island of Cape Breton, separated from the north-east coast of the mainland by the narrow Gut of Canso. The isthmu connects Nova Scotia with New Brunswick between Chignecto Bay and Bay Verte is only across. Including both portions, the area of the province is about 17,500 square miles, of whi a fourth belongs to the island. The surface is in general moderately undulating, and con considerable elevation. The southern shore of the Bay of Fundy from Cape Blomidon to Briar is lined by a lofty mural precipice of trap rocks, from 300 to 600 feet high, against which the in tides and waves of the bay dash with great violence. This dyke is broken through in severa which afford by the Annapolis Gut access into the interior. The Highlands of the south-we the peninsula have not been explored. Nova Scotia has been unfavourably represented as a h foggy region; but the summer fogs which prevail on the southern and south-western shore extend far inland. Although the winters are long and cold, yet they are not more so than in jacent parts of New England, and the climate is remarkably healthy. The soil is well ad agriculture; and the cultivated portion chiefly on the southern shore, which contains about a f of the surface. The mineral wealth of the province is uncommonly great; but hitherto it h turned to little account. The Cumberland, Pictou, and Sydney coal beds, the magnetic iro Annapolis county, and the bog iron ore of various places, granite and freestone of excellent qu building materials, the latter affording the blue grits so much esteemed in the United S grindstones, and the former, excellent millstones; writing and roofing slates gypsum and lime copper, copperas ore, alum earth; pipe clay; red and yellow ochres; and salt, are enumerate its minerals. About 100,000 tons of gypsum are annually exported for the United States; and a quantities of coal from the Pictou and Sydney beds. The population of the province is about 2 is composed of a small number of Acadian French, the descendants of American loyalists and emigrants, and of British emigrants. The principal trade of Nova Scotia is with the We Britain, and the United States. Lumber, fish oil, furs, &c. are exported to Britain; lumbe and pickled fish, flour, salt provisions, cattle, &c. to the West Indies and the southern Stat and gypsum to the northern and middle States. *Halifax*, the capital, is a large town with 1 habitants, pleasantly situate on an inlet of the sea, which forms one of the finest harbour world. It is easily accessible, and large enough to accommodate any number of vessels. Halif principal British naval station in North America, and contains a royal dockyard on an e scale. On the coast south-west of Halifax are *Lunenburg* and *Liverpool*, important from t harbours, fishery, and flourishing trade. They have each a population of 2000. *Shelburne*, ther south, once contained about 12,000 inhabitants, but is now almost deserted, though sit one of the best harbours in the world. *Yarmouth*, on the south-west coast, is noted for th prise of its inhabitants, who carry on an active coasting trade, and a thriving traffic with and the West Indies. *Windsor*, on the Mines basin, is the seat of King's College. *Pictou*, fine harbour of that name, is the principal town on the north-east coast; its population is abo and its fishery and lumber trade are considerable. The village of *New Glasgow*, on East ri risen with the coal trade, and small vessels are loaded there; but larger shi, s receive their ca the mouth of the river, to which the coal is carried down in lighters. Eight miles off the m the harbour, is the small island of *Pictou*. *Guysboro*, on Milford haven, at the head of t expanse called *Chedabucto Bay*; *Wilmot* on *Canso Harbour*; and *Sherbrooke* at the head of t gation on St. Mary's River, are small towns north-east of Halifax.

Cape Breton Island comprehends an area of about 2,000,000 acres, and is almost divided i parts by a deep gulf named the Bras d'or, which has two very narrow entrances from the Gu Lawrence on the north-east, and approaches at the south-west to within a mile of the Gut of It affords several deep and capacious harbours, and is valuable for its fisheries. Coal, salt, and are found here. The principal coal field lies between Miray Bay and Sydney harbour, and c the Sydney and Bridgeport mines, from which increasing quantities are annually shipped. *Sy* Spanish River or Sydney harbour, on the north-east side of the island, is the principal town only military post. Its population is about 1000, and its trade and fisheries are extensive. T

bour is one of the most secure and capacious in North America. *Louisbourg*, on the southern shore, so famous in colonial history, is now occupied by a few fishermen. *Arichat*, on Isle Madame, at the southern extremity of Cape Breton, is a large fishing village, with a pretty extensive trade. To the north of Cape Breton is the little island of *St. Paul*, directly in the track of vessels entering the Gulf of St. Lawrence. It has long been dreaded by seamen, on account of the dense fogs which prevail there, and the deep water almost close to its shores; but a lighthouse has recently been erected on it, which tends to diminish its dangers and terrors.

§ 4. *Honduras.*

Honduras is situate on the eastern coast of Central America, between 16° and 18° N. lat. and 88° and 90° W. long, and contains an area of 62,740 square miles. The coast is flat, and is bordered with reefs and low green islands called *keys*, which are divided by intricate and dangerous channels. From the coast the ground rises gradually into an elevated region covered with forests and marshes, and interspersed with rivers and lagoons. The climate is moist, but is said to be less unhealthy than that of the West Indies, especially during the wet season. The average annual temperature is 80°; but, during the greater part of the year, the heat is moderated by sea breezes. The rains are very heavy, and are accompanied by violent thunder storms; and during the wet season, which lasts five months, the thermometer sinks to 60°. The shores and river banks are covered with a deep and rich alluvial soil, capable of yielding most European as well as tropical products. The forests abound with some of the finest timber trees, including mahogany and logwood, which are the staple productions of the settlement, and the cutting of which is the principal employment of the settlers. The profits, however, of the Mahogany trade are very precarious. Logwood cutting is much less expensive; but the price fluctuates even more than that of mahogany, varying from £7 to £14 a ton. Cassava, yams, arrow-root, and maize are grown, but only for home consumption; the sugar-cane, cotton, and coffee, succeed well, but are little cultivated; cocoa and an inferior kind of indigo are indigenous. Oranges, and many other fine fruits are very abundant. European cattle and other domestic animals thrive greatly. The jaguar, tapir, armadillo, racoon, grey fox, deer of various kinds, and a vast number of monkeys abound in the settlement; birds and fish are in great variety, and shell-fish are particularly plentiful. Many turtles are also taken on the coasts and sent even to London. Honduras is governed by a superintendent nominated by the Crown, and by seven magistrates elected annually by the people, who together form a council. The only town is *Balize* (the Spanish form of *Wallis*, the name of a noted buccaneer), at the mouth of the river of the same name, which consists of about 500 houses, chiefly wooden, and elevated only ten feet from the ground. The total population of the settlement scarcely exceeds 4000, of whom only 300 are whites.

STATISTICAL TABLE OF THE SETTLED BRITISH PROVINCES IN NORTH AMERICA.

Name.	*Date of Settlement or Acquisition.*	*Area in Square Miles.*	*Population.*	*Capitals.*
Lower Canada,	1759	194,815	499,739	Kingston.
Upper Canada,	1760	147,000	393,925	
New Brunswick,	1630	27,700	130,000	Fredericton.
Nova Scotia,	1623	17,500	199,870	Halifax.
Cape Breton,	1758			
Prince Edward's Island,	1758	2,134	34,666	Charlotte-town.
Newfoundland,	1583	35,913	81,517	St. John's.
Honduras,	1670	62,740	3,958	Balize.
		557,802	1,343,675	

III. THE UNITED STATES
OF NORTH AMERICA.

SITUATION, EXTENT, BOUNDARIES. — The United States of North America are bounded on the north by the Russian and British provinces; on the east by New Brunswick and the Atlantic Ocean; on the south by the Gulf of Mexico, Texas, Mexico, and California; and on the west by the same states and the Pacific Ocean. By treaty with Spain in 1819, and with Mexico in 1828, the boundary line, beginning at the mouth of the Sabine, runs north, along the western bank of that river, to 32° N. lat.; thence due north to the Red River, and westward along that river to 100° W. long.; from this point it extends north to the Arkansas, whose course it follows along the southern bank, to its source in lat. 42° N., from which it runs due west on that parallel to the Pacific Ocean. All the islands in the limitary rivers belong to the United States; but the navigation is free and common to the citizens of the contracting countries. By treaty with Russia, in 1824, it was stipulated that that power should form no settlements south of 54° 40′ N. lat.; but the tract lying beyond the Rocky mountains, between the Mexican and the Russian territories, is claimed by the British Government, whose subjects have advanced their settlements to the Columbia River.

By the treaty of 1783, with Great Britain, the eastern boundary was fixed at the river St. Croix, from its mouth to its source, and a line drawn thence due north to the highlands which divide the waters of the Atlantic from those of the St. Lawrence. The position of the dividing ridge, which was to form the northern boundary in this quarter, is still a subject of dispute. Following that ridge, wherever it may be, to the north-western head of the river Connecticut, the boundary line then passes down the middle of that river to lat. 45°, westward on that parallel to the St. Lawrence, and then through that river and the great lakes to the north-western corner of the Lake of the Woods. From this point it was stipulated that the line should run due west to the Mississippi; but as it was afterwards discovered that the Mississippi did not reach so far north, and, as the acquisition of Louisiana by the United States had left unsettled the northern boundary west of that point, it was stipulated, that from the north-western corner of the Lake of the Woods, it should run due north to the parallel of 49°, and thence westward along that parallel to the Rocky Mountains. Beyond these, the boundary is still unsettled, both Governments claiming the whole Oregon territory along the Pacific between 42° and 54° N. lat.

The whole of the vast region included within the boundaries above specified, contains an area of about 2,300,000 square miles, with a frontier line of 10,000 miles, of which about 3600 are sea-coast, and 1200 lake-coast. A line drawn across the continent from the Pacific Ocean to the Atlantic, near the middle of the States, is about 2500 miles in length; and the greatest breadth, from north to south, is nearly 1400 miles. But the portion of country comprised within the limits of the actually organized States and territories, is bounded by a line running north from the Sabine to the Missouri, and following the latter to the mouth of the White-earth-river, and may be estimated to contain about 1,300,000 square miles. An almost straight line, however, drawn from the river Des Moines to Green Bay, but curving a little to the north-west, would mark the actual limits of occupancy, thus excluding about 270,000 square miles, still owned and inhabited by Indian tribes east of the Missouri.

GENERAL ASPECT.—Three great systems of mountains (See *ante*, p. 875) divide the country into three distinctly marked sections, the Atlantic table-land and slope, the Mississippi valley, and the Pacific section. The Alleghany or Appalachian mountains, which separate the first two sections, are more remarkable for their length than for their height. The mean elevation of the chain is not more than 2000 or 3000 feet, of which one half consists of the elevation of the country which forms their basis. Between the sources of the principal rivers of Alabama and Mississippi, and the great lakes and the St. Lawrence, and about midway between the Atlantic and the Mississippi, lies a vast table-land, which occupies the western part of the Atlantic States and the eastern part of the adjoining states of the Mississippi valley. On this table-land, which carries a somewhat tempered northern climate into the region south of the river Tennessee, rise five or six parallel mountain chains, of which the most remarkable are the *Blue Bridge* in Virginia, the *Kittatinny* mountains, and the *Alleghany* ridge, both in Pennsylvania. The highest range of the Alleghanies is found in New Hampshire,

under the name of the *White Mountains*, so called from the greyish-white colour of the bare rocks that form their summits. *Mount Washington*, the highest point, rises to the elevation of 6234 feet, and there are several others, which exceed 4000 and 5000 feet (See *ante*, p. 875). In Vermont, the ranges take the name of the *Green Mountains*, from their summits being covered with a spongy green moss and their sides with forests; their elevation, however, does not exceed 3500 feet.

The second mountain system, which forms the western boundary of the Mississippi valley, and is known under the various names of *Rocky*, *Stony*, *Oregon*, and *Chippewyan* mountains, is a prolongation of the cordilleras of Mexico; but it has been only partially examined. The average elevation of the summits above the base is estimated at 5000 feet; but some of them probably reach 8000 or 10,000. The elevation of the base itself is about 3000 feet above the level of the sea. The *Black Hills*, which stretch between the Upper Platte and the Missouri, below the mouth of the Yellowstone, are probably an outlying chain of this system; but little is known of their course and elevation. The *Ozark* mountains extend from the Rio del Norte to the vicinity of the Missouri, below the Osage river, attaining in some places an elevation of 3000 feet. Farther west is the prolongation of the snowy range of the mountains on the Pacific coast, which stretches northward from California to Alashka.

Along the whole Atlantic coast of the United States, from the river Hudson to the Florida channel, and gradually widening from a few miles broad in the north, to upwards of 150 in the south, is an extensive level tract very little elevated above the surface of the sea, and which has been appropriately termed the Atlantic Plain. The western limit of the plain is very distinctly marked by a rocky ledge over which the rivers fall, and to the foot of which, in the northern section, the tide penetrates. Extensive morasses and swamps, sluggish streams, and wide arms of the sea stretching far inland, are among the features of this plain, which slopes gently eastward, and may be considered as continued under the sea from the soundings which are given by all this part of the coast. The irregularities of its surface have been caused rather by the excavations which have been made below the general level by the action of running water than by any considerable elevations above it. The table-land which rises along the western border of this plain, has a general elevation of from 800 to 1200 feet, but is in some places considerably higher. A similar, but more elevated table-land lies between the heads of the Platte, Arkansas, and Missouri, and the western littoral chain of mountains; and between these two table-lands, and the mountains which rise above them, lies the great Mississippi valley, which presents the appearance of having once been the bed of a sea, or of a series of fresh-water lakes, and to have emerged from the waters at a comparatively recent period. It is in general characterized by uncommon fertility, though it contains great diversities of soil, from the richest alluvium to the most sterile flint knobs; and from the most entangled cane brakes to the poorest pine hills. There are, besides, near the Rocky Mountains, wide sandy belts, either completely barren, or only covered with a scanty vegetation of weeds and coarse grass. In some parts indeed there are wastes of moving sand, like those of the African Sahara. The eastern portions of the valley, where it is yet uncultivated, are covered with forests; but to the westward and northward extend vast *prairies*, or undulating tracts of country clear of trees, and rising to a considerable elevation in the centre. The surface of prairie, for 100 leagues west of the Mississippi, is probably, in comparison with the wooded country, in the proportion of twenty to one; the little timber which is seen occurs only on the skirts of the water-courses; and as the traveller recedes from the margins of the rivers, the prairies become more dry, sterile, and destitute not only of wood and water, but of all vegetation. The middle part of this great valley forms a plain, the elevation of which throughout its whole extent, leaving out of view a few unimportant local inequalities, varies only a few feet. There is, however, a gradual declination from the north-east towards the south-west. From Pittsburg the Ohio river has a descent of only 700 feet to its mouth, a distance of 1100 miles. The plains of Kentucky and West Tennessee are nearly on the same level as the country around Pittsburg, and proceeding westward, up the Missouri or Arkansas, we reach similar elevations, which form the exterior limits of the plain. The numerous rivers that run through it, instead of forming separate valleys, only indent narrow lines or grooves in its surface, which are barely sufficient to contain their floods. These river channels, as the current rolls on, must form a declivity; and towards the lower parts they therefore sink deep into the plain. Hence the large rivers, Ohio, Missouri, and others, seem to be bordered with abrupt hills of several hundred feet in elevation; but the tops of these hills are on the level of the great plain, and are formed by smaller streams which fall into the large rivers, where their channels are thus worn down. The plain rests on an

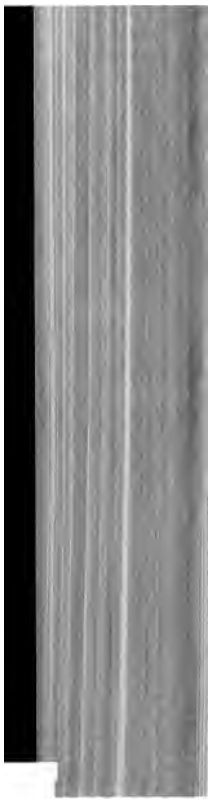
almost horizontal bed of limestone, of such thickness that it has never been pier through, although, in many places, the auger has penetrated from 400 to 600 f in search of salt water. The rock lies but a few feet below the surface, and supp throughout its whole extent strata of bituminous coal, and saline impregnations. the decomposition of this limestone may be attributed, in part, the fertility of the s while its absorbent and cavernous character prevents the accumulation of swa and standing pools, and renders the whole plain dry and salubrious in a remark degree.

CLIMATE. — The climate of the United States embraces every variety of tem rature, from the cold sea air of Passamaquoddy to the dry, elastic, and severe t perature of the White and the Green Mountains; rising through all the degree the thermometer to the climate congenial to the olive, the sugar cane, and the ora It is, however, excessive, and subject to great and rapid changes. Captain Sm in his account of the Chesapeake Bay, presented to Queen Anne, says, that in country the summer is as hot as in Spain, while the winter is as cold as in Franc England; and Mr. Jefferson, in his "Notes on Virginia," says, "The extreme heat and cold, of 6° below zero, and 98° above it, are distressing." He adds, in 1780 the Chesapeake Bay was frozen from its head to the mouth of the Potom and at Annapolis, where it is 5½ miles between the nearest points of land, the was from five to seven inches thick, so that loaded waggons crossed over. Se colds, rheumatisms, intermittent fevers, and agues are the natural consequence such extremes as these. On this account the climate will not allow the inhabit to take the exercise necessary for health, without running great risks, and very o contracting colds and chills, which end in consumption. The climate on the coasts of the Eastern States, from Maine to Baltimore, is the worst of all, becaus addition to the sudden changes, cold and damp easterly winds prevail, and occasi great deal of disease. The Americans, however, are fond of their climate, and sider it the best in the world. But, if the climate is not healthy, it is certa beautiful to the eye; the sky is so clear, the atmosphere so dry, the tints of the foli so inexpressibly lovely in autumn and the early winter months; and at night stars are so brilliant, that it is not surprising the Americans should praise it, and proud of its apparent superiority. The climate of Britain, though unprepossessin the eye, and depressing to the spirits, is nevertheless much more healthy than exciting and changeable, though beautiful, atmosphere of the United States. though in the eastern states consumption is very prevalent, in the western regions disease is scarcely known. The American diseases generally are neuralgic, or those affect the nerves, and are common to almost all the Union. Ophthalmia, and p cularly the disease of the optic nerve, is very common in the eastern states, and t are annually more diseases of the eye in New York city alone than are perhaps to all over Europe. The tic doloreux is another common complaint over all Am indeed so common, that one out of ten suffers from it more or less, the majority b women. In short the climate is one of extreme excitement, and the American p are in consequence more excitable, and more rapid in muscular movement than European stocks from which they are descended. The winters of Wisconsin, Iow Missouri, and Upper Canada, are dry and healthy, enabling the people to take any portion of exercise. Michigan, Indiana, Illinois, and part of Ohio, are very unhea in autumn, from the want of drainage; the bilious congestive fever, ague, and dy tery, carry off large numbers of people. Virginia, Kentucky, North Carolina, and eastern parts of Tennessee, are comparatively healthy. South Carolina and the o southern states are subject to visitations of the yellow fever, and many of the i bitants consequently migrate at the end of each season to the northward, not onl avoid the contagion, but also to renovate their general health, which suffers from continual demands made by the climate on their physical energies; the atmosphe the western and southern country being even more exciting than that of the e Vermont, New Hampshire, the inner part of New York, and all the other States border on the great lakes, are healthy, owing to the dryness of the atmosphere is modified by the proximity of so large bodies of water. The excitement which vails throughout the Union, and forms so remarkable a feature in the Amer character, is occasioned much more by climate than by any other cause; thou unquestionably, the peculiarity of the national institutions affords constant alim for this excitement to feed on, and therefore seldom allows it to repose. The mate seems also to be, in some degree at least, the cause of two bad habits to wh the Americans are much addicted, namely, the use of tobacco, and of spiritu liquors. The effect of tobacco is narcotic and anti-nervous; it allays irritation

enables the American to indulge in stimulating habits, without the accompaniment of their immediate evil consequences. To the rapid changes of the climate, and to the extreme heat of summer, must also in a great degree be ascribed the excessive use of spirituous liquors. The system, depressed or disordered by the sudden changes, requires stimulants to equalize the pulse. The variableness, however, of the climate, says Mr. Flint, has been generally overcharged. The range of the thermometer is indeed great and sudden, sometimes amounting to 25° or 30° in a day; but, in his opinion, the corresponding flexibility of constitution which it produces, is beneficial. The country and climate, he adds, in configuration, character, and productions, correspond more nearly to those of China than to any other; and are probably as favourable to population, comfortable occupation in the open air, and longevity, as those of countries much more celebrated in these respects.

VEGETABLE PRODUCTIONS.—The United States have already made astonishing progress in industry and wealth. Agriculture has ever been the staple pursuit of the North Americans; and agricultural products have always constituted their principal articles of export. The first exports of the early colonists were the natural products of the forest: furs, lumber, pitch and tar, pot and pearl ashes, with some cattle and provisions, constituted the chief articles of trade from the northern provinces in the early part of the eighteenth century; but rice and tobacco had even then become important items of exportation from the southern colonies. At a later period wheat became the great staple of the middle and western states, and cotton that of the more tropical sections of the country. Flax and hemp thrive particularly in the rich soil of Kentucky. Maize, being suited to a great variety of soils and situations, is so universally cultivated as to have received the name of corn, as a distinctive appellation. Oats for horses, and rye for distillation, are the prevalent species of grain in the northern states; while, in the extreme south, the sugar-cane is found to flourish, and to supply about one-half of the American consumpt of sugar. Grapes for wine, and beet for sugar, are articles of prospective culture, regarding the value of which sanguine expectations are entertained. Cotton, the great staple of the United States, is raised in small quantities in Virginia and Kentucky, and is chiefly produced in the country farther south. It is the produce of the herbaceous or annual cotton-plant, and is of two kinds, the sea-island or long staple, and the upland or short-staple. The former, which is of a superior quality, is grown only along the sea-coasts of South Carolina and Georgia. Cotton was first sown in the United States in or about 1787, and was first exported in small packages in 1790; in 1836 the cotton crop produced 480,000,000 lbs., of which 386,000,000 lbs. were exported. It is estimated that good lands yield on an average from 250 to 300 lbs. of clean cotton per acre, and inferior lands from 125 to 150; and that the capital invested in the cultivation is nearly 800,000,000 dollars, or about £180,000,000 sterling. Of late a valuable oil has been obtained from the seeds. A new species, called Nan-king cotton, of a rich, yellowish colour, and fine quality, is also beginning to be cultivated. Tobacco has been the staple of Virginia and Maryland from their first settlement, and is also extensively grown in Kentucky, Ohio, Missouri, and other states. It is decidedly superior in quality to the tobacco of most other countries; and, besides the large quantity made into cigars, snuff, and twist for chewing, there is an annual exportation of from 80,000 to 90,000 hogsheads of leaf tobacco, of the value of about £1,200,000. The sugar-cane is cultivated with success in Louisiana, where several varieties are reared. The cane does not produce seed any where in Louisiana, but it blooms on the sea-coast. The annual crop is about 100,000 hhds. of sugar, with 63,000 hhds. of molasses. Rice was first cultivated in South Carolina in 1694, since which time its culture has been so successful, that, in addition to supplying the home consumption, it affords an annual surplus of from 130,000 to 150,000 tierces, of the value of £400,000 or £500,000, for exportation. We have no means of estimating the value of the grain, sheep, and cattle, raised in the United States. Indigo was formerly produced in large quantities in Carolina and Georgia, but, since the introduction of cotton, the cultivation of this plant has almost entirely ceased.

MINERAL PRODUCTIONS.—The United States are richly supplied with valuable minerals; but it is only of late that the mines have begun to be a source of wealth; nor are they yet worked in a manner or to an extent worthy of their great importance. Gold, iron, and lead, are extensively diffused; coal and salt exist in abundance; while beautiful and durable building materials are furnished by the marble, freestone, and granite quarries of different sections of the Union. The gold region, so far as the mining operations have yet been attempted, may be considered as extending along the



cess, and will afford new facilities in the prosecution of this industry. The lead mines of the United States are extre hitherto they have been worked but very imperfectly. They ar between the Gasconnade, the head waters of the White river, and in Wisconsin territory and Illinois, between the Wisc rivers, and on the opposite side of the latter. A very rich s of lead also occurs in St. Lawrence County, New York; and the south-western part of Virginia. The annual produce of is about 3,000,000 lbs., that of the mines on the Upper M 8,000,000 lbs. The American manufactures of shot, and of now nearly supply the domestic consumption. Salt is chiefly of springs, which are plentifully distributed throughout the cou in the Mississippi valley. In 1835, 2,000,000 bushels of salt wer daga springs in New York; 1,000,000, in the western part of Pen at the Kanhawa springs in Virginia; 500,000, in Ohio; about Massachusetts from sea-water; forming altogether, with the the other states, an aggregate of about 7,000,000 bushels. quality is very widely and copiously distributed, and is daily importance, as it is more extensively used in the manufac and salt, in driving steam-engines, and for domestic purpos sorts of coal, the anthracite and the bituminous. The former worked in Pennsylvania, from three distinct beds; two of wh Lehigh and the Susquehanna, and the head waters of the northern branch of the Susquehanna, the third lies on both wana river, and of the northern branch of the Susquehanna, a mouth of that tributary. This coal is largely consumed in th New England, nearly 900,000 tons being brought to market a minous coal is found all over the valley of the Mississippi, on th Potomac, and on the James river in Virginia. We have no d the total consumption, but it is estimated that about 250,00 consumed in and about Pittsburg; 150,000 in the salt manufactu sylvania; and 300,000 in the salt-works of the Kanhawa; to w consumption of the towns in the valley for domestic purposes will not be doubted that coal mining is already an important b productions of the country.

PEOPLE.—The great mass of the citizens of the United States of emigrants from Great Britain and Ireland; but many are also

savages, and look at the rapid and steady increase which has marked its progress, we see a new and most striking phenomenon in the history of the human race. Though there has been a great accession of numbers by immigration from Europe, ever since the first settlement of the country, yet there is no reason to doubt that the growth of the population is chiefly owing to the natural increase of a community multiplying itself without any check from difficulty of subsistence, or want of unoccupied lands. Nor is it a less interesting consideration, that this same facility of self-multiplication will continue to exist for an indefinite period; and that, should no external or accidental cause interfere, the United States will, before the end of the present century, form the most numerous Christian community, speaking one language, in the world. The first official census was taken in 1790, since which period there have been five decennial enumerations; their results are stated in the following table.

Year.	*Whites.*	*Slaves.*	*Free Coloured.*	*Total Coloured.*	*Total Population.*
1790	3,172,464	697,897	59,466	757,363	3,929,827
1800	4,304,502	893,041	108,398	1,001,439	5,305,941
1810	5,862,004	1,191,364	186,446	1,377,810	7,239,814
1820	7,872,711	1,543,688	238,197	1,781,885	9,654,596
1830	10,537,378	2,009,043	319,599	2,328,642	12,866,020
1840	14,389,368	2,369,553	361,606	2,731,159	17,120,527

The black population of the United States, in which are included not only the negroes, but also the mulatto and mixed races, forms somewhat more than one-sixth of the total population. The free blacks are not generally admitted to political privileges; in some States their testimony is not admissible against a white man, and they are subject to some other civil disabilities. Slavery has been abolished in the eastern states and in New York, and prospectively in Pennsylvania and New Jersey, and has never existed in the north-western States to the north of Kentucky. The maritime slave-trade has been declared piracy; but a great and active inland trade is carried on from the Atlantic slave states to the new settlements in the south-west; and it is believed that the number clandestinely introduced into the country from the other side of the Atlantic has been considerable, even since the trade was declared illegal. Slavery may be said to exist in thirteen states, namely, Delaware, Maryland, Missouri, Arkansas, and all the states south of the Potomac and the Ohio. The slaves form rather more than one-third of the population of the slave-holding states; but they are unequally distributed, and the whites generally preponderate.

The aboriginal races, or Indians resident within the territory of the United States, are not included in any of the enumerations. Their total number within the constituted states and territories is estimated at about 96,000; between the states and the Rocky Mountains, 150,000; west of the mountains, 50,000; total, 296,000.

EDUCATION.—Various provisions have been made in all the states for the literary and scientific education of their citizens; in most of them common and free schools are widely distributed; and high schools, gymnasiums, and colleges, are numerous. The necessary expense is provided for either by means of "school funds," accumulated from various sources, or by taxation; and, in the new states and territories, a thirty-sixth part of the public lands is reserved for the purposes of education. But in several of the latter, no general system of instruction has yet been introduced; and indeed, throughout the Union, there is neither any general system, nor is education carried to that extent and degree of efficiency which seem necessary, under so democratic a government, to render the people capable of beneficially exercising and performing their important political duties and privileges. "One of the most common errors, in my opinion," says Mr. Combe, "committed by foreigners who write about America, as well as by the Americans themselves, is greatly to over-estimate the educational attainments of the people. The provision in money made by law for the education of all classes is large, compared with such countries as Britain or Austria; but, contrasted with what is necessary to bestow a really good education, it is still very deficient." And, owing to various causes, which he specifies, the education received by probably nineteen-twentieths of the children in the agricultural districts is extremely defective.—(*Notes*, III. 103.) The Secretary of the American Common School Society estimates the total number of children in the United States between the ages of four and sixteen years, at 3,500,000; and of this number 600,000 do not enjoy the benefits of a common school education.—(*Ib.* III.) Lecturing to the people in lyceums is extensively practised, and as a mode of public instruction

it is well calculated to advance their intelligence; but hitherto, in consequ the defects of their education, in the primary schools, it has not yielded half vantages. Education, however, in the higher branches of science, literatu professional knowledge, is amply provided by a great number of universities a leges, whose names, situations, &c. will be found in the following lists:—

COLLEGES IN THE UNITED STATES.

Name.	Place.		Founded.	Instructors.	No. of Alumni.	Volumes in Libraries.
Bowdoin,	Brunswick,	Me.	1794	8	649	14,000
Waterville,*	Waterville,	do.	1820	6	145	6,000
Dartmouth,	Hanover,	N. H.	1770	15	2093	16,500
University of Vermont,	Burlington,	Vt.	1791	7	241	9,200
Middlebury,	Middlebury,	do.	1800	7	758	7,694
Norwich University,	Norwich,	do.	1834	4	..	..
Harvard University,	Cambridge.	Mass.	1638	28	3564	53,000
Williams,	Williamstown,	do.	1793	8	933	7,500
Amherst,	Amherst,	do.	1821	12	613	12,500
Brown University,*	Providence,	R. I.	1764	9	1200	14,000
Yale,	New Haven,	Con.	1700	32	4824	27,000
Washington,†	Hartford,	do.	1824	9	175	6,500
Wesleyan University,‡	Middletown,	do.	1831	9	110	10,300
Columbia,†	New York,	N. Y.	1754	11	1170	14,000
Union,	Schenectady,	do.	1795	12	2022	13,000
Hamilton,	Clinton,	do.	1812	7	454	9,000
Hamilton Lit. and Theol.,*	Hamilton,	do.	1819	10	140	4,000
Geneva,†	Geneva,	do.	1823	11	43	5,420
University of New York,	New York,	do.	1831	13	106	..
College of New Jersey,	Princeton,	N. J.	1746	13	2183	11,000
Rutgers,	New Brunswick,	do.	1770	6	300	6,500
University of Pennsylvania,	Philadelphia,	Penn.	1755	14	880	5,000
Dickinson,‡	Carlisle,	do.	1783	9	510	10,600
Jefferson,	Canonsburg,	do.	1802	7	650	4,500
Washington,	Washington,	do.	1806	6	224	3,300
Allegheny,‡	Meadville,	do.	1815	5	16	8,000
Western University,	Pittsburg,	do.	1819	..	45	500
Pennsylvania,	Gettysburg,	do.	1832	4	35	2,270
Lafayette,	Easton,	do.	1832	9	18	1,350
Marshall,	Mercersburg,	do.	1836	4	..	..
Newark,	Newark,	Del.	1833	5	4	1,200
St. John's,	Annapolis,	Md.	1784	5	115	4,000
St. Mary's,§	Baltimore,	do.	1799	25	187	12,000
Mount St. Mary's, §	Emmitsburg,	do.	1830	18	41	3,500
Georgetown,§	Georgetown,	D. C.	1789	17	90	12,000
Columbian,*	Washington,	do.	1821	10	97	4,300
William and Mary,†	Williamsburg,	Va.	1692	5	..	4,250
Hampden-Sidney,	Prince Ed. Co.	do.	1783	5	..	8,000
Washington,	Lexington,	do.	1812	5	400	2,000
University of Virginia,	Charlottesville,	do.	1819	9	200	16,000
Randolph-Macon,‡	Boydton,	do.	1832	6	..	..
Emory and Henry,†	Glade Spring,	do.	1839	5	..	1,000
Rector College,*	Harrison Co.,	do.	1839	..	..	..
University of N. Carolina,	Chapel-Hill,	N. C.	1791	8	620	9,000
Davidson,	Mecklenberg Co.	do.	1838	4	..	..
Wake Forest,*	Wake Forest,	do.	1838	4	14	4,000
Charleston,	Charleston,	S. C.	1795	..	67	3,000
South Carolina College,	Columbia,	do.	1804	9	..	13,000
University of Georgia,	Athens,	Ga.	1785	9	433	11,000
Oglethorpe,	Midway,	do.	1836	6	..	..
Emory,†	Oxford,	do.	1837	5	..	..
University of Alabama,	Tuscaloosa,	Ala.	1828	8	54	5,289
Lagrange,†	Lagrange,	do.	1831	6	20	1,000
Spring Hill,§	Spring Hill,	do.	1830	5	..	4,000
Jefferson,	Washington,	Mp.	1802	6	..	1,522
Oakland,	Oakland,	do.	1831	6	..	..
Louisiana,	Jackson,	La.	1825	9	12	1,800
Jefferson,	Bringiers,	do.	1831	12	..	1,000
St. Charles,§	Grand Coteau,	do.	..	12	..	..
Baton Rouge,	Baton Rouge,	do.	1838	5	..	300
Greeneville,	Greeneville,	Tenn.	1794	2	110	3,600
Washington,	Washington Co.	do.	1794	1	110	1,000
University of Nashville,	Nashville,	do.	1806	6	235	8,453
East Tennessee,	Knoxville,	do.	1807	5	32	3,307
Jackson,	Near Columbia,	do.	1830	5	3	1,250
Transylvania,	Lexington,	Ken.	1798	13	610	4,400
St. Joseph's,§	Bardstown,	do.	1819	15	150	7,000
Centre,	Danville,	do.	1822	8	..	2,000
Augusta,†	Augusta,	do.	1825	6	60	2,500
Cumberland,	Princeton,	do.	1825	4	82	1,050
Georgetown,*	Georgetown,	do.	1829	..	12	1,200
Bacon,	Harrodsburg,	do.	1836	8	..	1,200
St. Mary's,§	Marion Co.	do.	1837	7	6	4,000
University of Ohio,	Athens,	Ohio	1821	5	145	2,500
Miami University,	Oxford,	do.	1809	6	254	4,352

COLLEGES IN THE UNITED STATES—(CONTINUED.)

Name.	Place.		Founded.	Instructors.	No. of Alumni.	Volumes in Libraries.
Franklin,	New Athens,	Ohio.	1825	6	84	1,900
Western Reserve,	Hudson,	do.	1826	10	51	4,200
Kenyon,†	Gambier,	do.	1826	12	61	8,720
Granville,*	Granville,	do.	1832	5	..	3,000
Marietta,	Marietta,	do.	1832	8	12	3,500
Oberlin Institute,	Oberlin,	do.	1834	10	..	..
Cincinnati,	Cincinnati,	do.	1819	8	..	..
Woodward,	Cincinnati,	do.	..	6	..	800
Indiana,	Bloomington,	Ind.	1827	5	59	1,765
South Hanover,	South Hanover,	do.	1829	5	..	..
Wabash,	Crawfordsville,	do.	1833	5	6	2,000
Indian Asbury University,‡			1839	3	..	..
Illinois,	Jacksonville,	Il.	1829	5	7	2,000
Shurtleff,*	Upper Alton,	do.	1835	3	..	1,000
McKendree,‡	Lebanon,	do.	1834	4	..	..
McDonough,	Macomb,	do.	1837	..	..	..
University of St. Louis,§	St. Louis,	Mo.	1829	15	10	7,900
St. Mary's,§	Barrens,	do.	1830	12	8	6,400
Marion,	New Palmyra,	do.	1831	4	3	2,300
Columbia,	Columbia,	do.	1835	3	..	..
St. Charles,‡	St. Charles,	do.	1839	4	..	..
Fayette,	Fayette,	do.	..	2	..	..
Michigan University,	Ann Arbour,	Mich.	1837	..	..	..
Marshall,	Marshall,	do.	..	2	..	..
St. Philip's,§	Near Detroit,	do.	1839	4	..	3,000

REMARKS.

The Colleges marked thus (*) are under the direction of the *Baptists*; thus (†) *Episcopalians*; thus (‡) *Methodists*; thus (§) *Catholics*.

With respect to the Colleges which are *unmarked*, the prevailing religious influence of those that are in the New England States is *Congregationalism*; of the most of the others, *Presbyterianism*. Norwich University, Vt., is an institution recently established by the *Universalists*.

Some of the Colleges above enumerated are not in full operation; and scarcely deserve a place in the Table. Several other Colleges have been incorporated, which are not yet fully organized.

The information given in these Tables has been obtained from various sources. Much aid has been derived from a valuable document entitled *Statistics of Colleges and Theological Seminaries in the United States*, found in the Appendix to the "Twenty-fourth Annual Report of the Directors of the American Education Society."

The column of *Libraries* includes the number of volumes in the *College Libraries* and in the *Students' Libraries*. In some instances, the number of volumes in the Students' Libraries exceeds that of the College Library.

MEDICAL SCHOOLS.

Name.	Place.	Lectures commence.	Prof.	Stud.
Maine Medical School,	Brunswick,	Feb. 10 to 18,	4	70
New Hampshire Medical School,	Hanover,	1st or 2d Thur. Aug.	3	77
Vermont Academy of Medicine,	Castleton,	2d Thurs. in March,	5	25
Vermont Medical College,	Woodstock,	2d Thurs. March,	5	80
Mass. Medical School, Harv. Univ.	Boston,	1st Wed. in Nov.	6	85
Berkshire Med. Inst., Williams Col.	Pittsfield,	1st Thurs. in Sept.	5	100
Med. School, Yale College,	New Haven,	{6 weeks from 3d Wed. in Aug.}	6	45
Coll. Physicians and Surgeons, N. Y.	New York,	1st Mond. in Nov.	7	106
Coll. Phys. and Surg. West. Dist.	Fairfield,	1st Mond. in Oct.	6	164
Geneva Medical College,	Geneva,	1st Wed. in Oct.	6	81
Albany Medical College,	Albany,	1st Tues. in Oct.	8	68
Medical Dep. Univ. Pennsylvania,	Philadelphia,	1st Mond. in Nov.	7	444
Medical Dep. Jefferson College,	do.	1st Mond. in Nov.	7	145
Medical Dep. Pennsylvania College,	do.	1st Mond. in Nov.	6	60
Medical Dep. Univ. Maryland,	Baltimore,	1st Mond. in Nov.	6	65
Washington Medical College,	do.	1st Mond. in Nov.	6	60
Medical Dep. Univ. Virginia,	Charlottesville,	1st Mond. in Sept.	6	45
Hampden-Sidney College,	Richmond, Va.	1st Mond. in Nov.	6	50
Medical College of the State of S. C.	Charleston,	2d Mond. in Nov.	8	193
Medical College of Georgia,	Augusta,	2d Mond. in Nov.	7	55
Medical College of Louisiana,	New Orleans,	1st Mond. in Dec.	8	30
Medical College of Trans. Univ.	Lexington,	1st Mond. in Nov.	7	257
Louisville Medical College,	Louisville,	1st Mond. in Nov.	8	204
Medical College of Ohio,	Cincinnati,	last Mond. in Oct.	6	120
Willoughby Medical College,	Willoughby,	last Mond. in Oct.	5	35
Reformed Medical College of Ohio,	Worthington,	1st Mond. in Oct.	5	..
Louisville Medical School	Louisville,		..	204

THEOLOGICAL SCHOOLS.

Name.	Place.	Denomination.	Commenced operation.	No. Profrs.	Students 1839-40.	Number educated.	Volumes in Libraries.
Bangor Theol. Seminary,..	Bangor, Me.	Cong.	1816	3	44	120	7,000
Thomaston Theol. Inst.....	Thomaston, do.	Baptist,.....	1837	2	23	..	50
Gilmanton Theol. Sem.....	Gilmanton, N.H.	Cong.	1831	3	26	35	2,000
Theological Seminary, ...	Andover, Mass.	Cong.	1808	5	135	780	17,000
Divinity School,.....	Cambridge, do.	Cong. Unit...	1824	3	17	100	..
Theological Institution,....	Newton, do.	Baptist,.....	1825	3	44	137	4,000
Theol. Dep. Yale College,..	N. Haven, Ct.	Cong.	1822	3	78	210	20
Theol. Inst. of Con.	E. Windsor, do.	Cong.	1834	3	29	37	4,000
Theol. Inst. Epis. Church,.	New York, N. Y.	Prot. Epis....	1817	5	74	186	7,500
New York Theol. Sem.	do. do.	Presbyt.	1836	4	129	..	11,000
Theol. Sem. of Auburn,....	Auburn, do.	Presbyt.	1821	4	71	344	5,000
Hamilton Lit. and Th. Inst.	Hamilton, do.	Baptist,.....	1820	4	27	128	2,200
Hartwick Seminary,.....	Hartwick, do.	Lutheran,....	1816	2	3	..	1,000
Theol. Sem. As. Ref. Ch...	Newburgh, do.	Ass. Ref. Ch.	1836	3	11	..	4,000
Th. Sem. Dutch Ref. Ch...	N. Br'wick, N. J.	Dutch Ref....	1784	3	30	..	..
Theol. Sem. Pr. Ch. U. S...	Princeton, do.	Presbyt.	1812	5	113	714	7,000
Sem. Luth. Ch. U. States,..	Gettysburg, Pa.	Evang. L....	1826	3	26	130	7,000
German Reformed,.....	York, do.	G. Ref. Ch...	1825	2	20	..	..
West. Theol. Seminary,....	Allegheny T. do.	Presbyt.	1828	2	31	175	6,000
Theological School,.....	Canonsburg, do.	Asso. Ch.....	..	2	22	47	1,000
Theological Seminary, ...	Pittsburg, do.	Asso. Ref.....	1828	1	19	..	..
Epis. Theol. School of Va..	Fairfax Co. Va.	Prot. Epis....	1822	3	32	126	3,000
Union Theol. Seminary,.....	Pr. Ed. Co. do.	Presbyt.	1824	3	20	175	4,000
Virginia Baptist Seminary,	Richmond, do.	Baptist,.....	1832	3	67	..	1,500
Southern Theol. Seminary,	Columbia, S. C.	Presbyt.	1831	3	18	62	3,000
Theological Seminary, ...	Lexington, do.	Lutheran,....	1835	2	10	20	1,000
Furman Theol. Seminary,...	High Hills, do.	Baptist,.....	..	2	30	30	1,000
Lit. and Theol. Seminary,..	Eaton, Ga.	Baptist,.....	1834		10	..	..
South-West. Theol. Sem...	Maryville, Ten.	Presbyt.	1821	2	24	90	6,000
Lane Seminary,.....	Cincinnati, Ohio.	Presbyt.	1829	3	31	35	10,000
Theol. Dep. Ken. College,..	Gambier, do.	Prot. Epis....	1828	3	10	..	..
Theol. Dep. Wes. Res. Col.	Hudson, do.	Presbyt.	..	3	14	6	..
Theological School,.....	Columbus, do.	Lutheran,....	..	..	..	..	..
Granville Theol. Dep.....	Granville, do.	Baptist,.....	1832	2	8	..	400
Oberlin Theol. Dep.	Oberlin, do.	Presbyt.	1834	4	54	..	..
Indiana Theol. Seminary,...	S. Hanover, In.	Presbyt.	..	2	10	..	..
Alton Theol. Seminary,....	Upper Alton, Il.	Baptist,.....	1835		..	..	..
Carlinville Theol. Sem.....	Carlinville, do.	Presbyt.	1838		..	..	700
Theol. Dep. Marion Col....	N. Palmyra, Mo.	Presbyt.	..	1	..	..	..

LAW SCHOOLS.

Place.	Name.*	Prof.	Stud.
Cambridge, Mass.....	Harvard University,.....	2	120
New Haven, Conn....	Yale College,.....	2	45
New York City,.....	Law Department, N. Y. Univ...	3	..
Carlisle, Pa.	Dickinson College,.....	1	23
Williamsburg, Va. ...	William and Mary College,.....	1	26
Charlottesville, Va...	University of Virginia, ...	1	72
Lexington, Ky.....	Transylvania University,.....	3	71
Cincinnati, Ohio,.....	Cincinnati,.....	3	25

Schools for the study of law are much less frequented than schools for the study of the other professions. The first institution of this nature, of much note, that was established in the United States was the Law School at Litchfield, in Connecticut, which had from 1798 to 1827, 730 students; but is now discontinued.

RELIGION.—There is, in the United States, no national religion or established church: every citizen is left to choose for himself; but the great bulk of the people profess Christianity according to some one or other of its numerous forms and creeds and the churches and the clergy of all sects are supported entirely by the voluntary contributions of their members. In the newer States the supply of ministers and churches is rather deficient; but in the older and more densely-peopled States both are provided for in a manner not surpassed by the establishments of any country with respect to the number of active ministers of religion, their comfortable subsistence, and the respectability of their character and attainments. The following table contains an approximative statement or summary of the principal religious denominations, with the number of their churches or congregations, ministers, members or communicants, and the amount of population belonging to each denomination:—

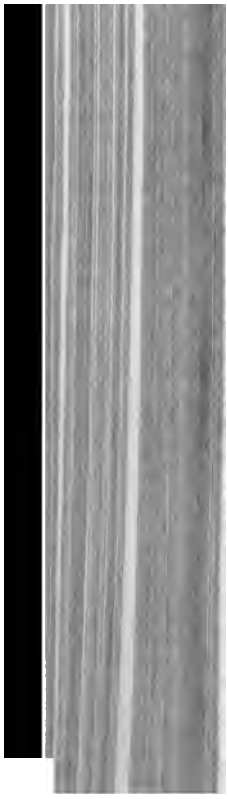
SUMMARY OF THE PRINCIPAL RELIGIOUS DENOMINATIONS.

Denominations.	*Churches, or Congregations.*	*Ministers.*	*Members, or Communicants.*	*Population.*
Baptists,	6,319	4,239	452,000	4,300,000
" Freewill,	753	612	33,876	
" Seventh-Day,	42	46	4,503	
" Six-Principle,	16	10	2,117	
Catholics,	418	478	..	800,000
Christians,	1,000	800	150,000	300,000
Congregationalists,	1,300	1,150	160,000	1,400,000
Disciples of Christ (Campbellites),	..	..	..	..
Dutch Reformed,	197	192	22,515	450,000
Episcopalians,	950	849	..	600,000
Friends,	500	..	..	100,000
German Reformed,	600	180	30,000	..
Jews,	..	..	..	15,000
Lutherans,	750	267	62,266	540,000
Mennonites,	200	..	30,000	..
Methodists,	..	3,106	686,549	3,000,000
" Protestant,	..	400	50,000	
Moravians or United Brethren,	24	33	5,745	12,000
Mormonites,	..	..	12,000	12,000
New Jerusalem Church,	27	33	..	5,000
Presbyterians,	2,807	2,225	274,084	2,175,000
" Cumberland,	500	450	50,000	
" Associate,	183	87	16,000	
" Reformed,	40	20	3,000	
" Associate Reformed,	214	116	12,000	
Shakers,	15	45	6,000	6,000
Tunkers,	40	40	3,000	30,000
Unitarians,	200	174	..	180,000
Universalists,	653	317	..	600,000

The above statements of the number of churches, ministers, and members of the several denominations, have been derived chiefly from recent official documents published by the different denominations; but the last column contains rather a vague estimate, which has appeared in various publications, of the total number of people who are attached to, or show a preference for the several different religious persuasions.

The Presbyterians are the prevailing sect throughout New England, New York, New Jersey, Pennsylvania, and the western parts of Maryland and Virginia; they are also numerous in the north-western States. The Methodists are more generally diffused throughout the States than any other sect. They are least numerous in New England and Louisiana, and most numerous in the middle States. The Baptists predominate in Rhode Island, Virginia, Kentucky, and most of the States farther south. The Catholics are numerous in the cities of the middle States, in which there are many French and Irish; they are spread over Maryland, have many congregations in Missouri, Illinois, and part of Kentucky, and predominate in Louisiana. They have one archbishop, who resides at Baltimore, and ten bishops. The Episcopalians have congregations in all the Atlantic and in most of the western States; they are most numerous in Connecticut, the middle States, Virginia and South Carolina; but in none do they hold more than the third or fourth rank in respect of numbers. They have twelve bishops in the Atlantic States, one in Ohio, and one in Kentucky. The Unitarians have churches in all the large cities of the eastern and middle States; but, except in Massachusetts, they have made little progress among the country population. The Quakers are most numerous in Pennsylvania; they have also congregations in New York, Virginia, North Carolina, and New England. Besides the distinct sects mentioned in the table, schisms occasionally arise, by which congregations become separated into two parts, each following its favourite pastor, without any change of denomination, discipline, or mode of worship.

GOVERNMENT.—The Government, as established by the constitution of 1787, is in form a federal representative democracy. The executive power is vested in the President, who holds his office for the term of four years. He is chosen by the electoral colleges of the several States, each of which consists of a number of electors equal to the whole number of the senators and representatives of the State in Congress. These electors are themselves appointed in the manner prescribed by the State legislatures; being in some cases chosen directly by the people, and in others by the legislatures. A majority of the aggregate number of votes given is necessary to the President's election; but if none of the candidates has such a majority, the House of Representatives of the General Congress chooses one of the three candidates who have the greatest number of votes; and, in doing so, the vote is taken by States, the representatives of each State having only one vote, which must of course be



a salary of 25,000 dollars, and the white house at Was
residence. The Vice-President is president of the Senate; a
resignation, or removal of the President, the powers and d
volve upon him for the remainder of the term. This provisio
come into operation in the present year (1841) in consequence
Harrison, the ninth president, after he had held the office onl

The legislative power is vested in a Congress, consisting o
of Representatives. The Senators are chosen by the legislature
for the term of six years, each State sending two Senators;
cation is required than that the person so chosen shall hav
thirty years, and shall have been nine years a citizen of the
Senate, in addition to its legislative powers, has a concurrent
dent in the ratification of treaties, and on executive nominat
power of trying persons impeached by the House of Represent
tatives are chosen for the term of two years by the people of
electors being those qualified to vote for the most numerous b
gislature. The number of the representatives of each State is re
of its population, three-fifths of the slaves being included in
slaveholding states (that is to say, five slaves being counted a
there is one representative for each 47,700 inhabitants. The
tives choose their own speaker and other officers; they have
peaching public delinquents; and all bills for raising revenue
them. No person who has not attained the age of twenty-five
years a citizen of the United States, is eligible as a represent
must assemble at least once a year. It has the power to impose
ties, imposts, and excises, except on articles exported; to b
credit of the United States; to regulate commerce; to coin
the standard of weights and measures for all the Union; to est
post-roads; to make laws for the punishment of piracies and f
the high seas, and of offences against the law of nations; to d
letters of marque and reprisal; to raise and support an army a
for calling out the militia to execute the laws of the Union, su
and repel invasions; to provide for arming, organizing, and dis
and to make all laws necessary to carry into execution the p
constitution in the government of the United States. Congres
direct authority over the district of Columbia, as is held by t
over their respective territories. Congress meets on the first M
each year, and continues to sit till the business is disposed of

department are attached a diplomatic bureau, a consular bureau, a home bureau, the archives, and the patent office.

The Secretary of the Treasury superintends the financial concerns of the government; he is required to report annually to Congress the state of the finances, and to recommend measures for improving the condition of the revenue. To this department are attached, besides the secretary, two controllers, five auditors, the register, the treasurer, the solicitor of the treasury, the mint, and the land office. The principal mint was established, in 1792, at Philadelphia, and still remains there; but branch mints have been established at Charlotte, in North Carolina; Dahlonega, in Georgia; and New Orleans.

The War Department is charged with the direction and government of the army; the constructing of fortifications; the execution of topographical surveys; and the direction of Indian affairs. Attached to, and under the direction of the Secretary at War, are the engineer department, ordnance department, topographical bureau, office of Indian affairs, requisition bureau, bounty-land bureau, pension office, paymaster-general's office, adjutant-general's office; quartermaster-general's office, commissary-general's office, &c.

The Secretary of the Navy has the management and control of the navy in general. This department was instituted in 1798: and, in 1815, the Board of Commissioners for the Navy, three in number, was instituted. The board, under the superintendence of the secretary, execute the ministerial duties of the department relative to the construction and employment of ships, &c.

The post-office is under the charge of the postmaster-general, who has the appointment of the postmasters throughout the country, and the power of making contracts for carrying the mail. To this department belong the contract office, the appointment office, and the inspection office. The number of post-offices in the United States, on 1st May 1840, was 13,376; the length of mail routes in the year preceding 1st July 1839, was 133,999 miles; and the annual transportation of the mails, 34,496,878 miles. The revenue for the same year was 4,476,638 dollars, and the expenditure 4,620,117 dollars, being an excess of 147,479 dollars.

The army is under the command of the major-general, who is styled the General-in-Chief, and who resides at Washington. There are two divisions of the army, at the head of each of which is a brigadier-general. The western division comprehends all the country west of the Mississippi, with head-quarters at Jefferson barracks, Missouri; the eastern comprises the country east of the Mississippi, with head-quarters at Elizabeth-town, New Jersey. Motives of economy and political jealousy have combined to keep the force of the army exceedingly low. It consists at present of 57 officers of the general staff, 83 of the medical department, 19 of the pay department, 3 of the purchasing department, 43 of the corps of engineers, 36 topographical engineers, 323 of the ordnance department; two regiments of dragoons, mustering 1498; four regiments of artillery, 3020; eight regiments of infantry, 7496; total, 12,539. The ranks of the army are chiefly filled up by foreign immigrants, the necessary discipline being quite uncongenial to the feelings and habits of free citizens, and the pay being much less than good tradesmen or labourers can earn by any other employment. The militia of the states is very formidable in point of numbers, amounting to 1,326,821 men; but this vast body is imperfectly armed and organized, and either extremely deficient in, or entirely destitute of, discipline and subordination.

The navy acquired much reputation in the last war with Britain; but principles of economy have here also interfered, and kept it below the state which the exigencies of the country require. In June 1840 it consisted of 11 ships of the line, of from 74 to 120 guns; 12 frigates of the first class; 2 of the second class; 21 sloops of war; 4 gun-brigs; 8 schooners; 4 steam-ships; and 1 store-ship; but of these several were only on the stocks, and most of the rest were laid up in ordinary.

The federal judiciary establishment consists of a supreme court, nine circuit courts, and thirty district courts. The judges are appointed by the Senate, on the nomination of the President, and hold office during good behaviour. The supreme court is composed of a chief justice and eight associate justices, who hold a court annually at Washington; each justice also attends a certain circuit, which comprises several districts, and, with the district judge, forms a circuit court, which is held in each district of the circuit. The district courts are held by the respective district judges alone. There is a district attorney in each district, whose duty it is to prosecute all offences cognizable by the law of the United States, and to manage all civil actions in which the Executive are concerned as parties. The marshal of each district attends the district and circuit courts, and executes the precepts directed to him

preme Court of the United States. The mode of electing an
bers of the legislative bodies, and the executive and judiciary c
the constitution of each State, and is a matter with which th
has no right to interfere. The constitutions of all the States
cal revisals by the citizens; that of Rhode Island is the only c
no change since its origin; it is still regulated by the cha
Charles II.

FINANCES. — The revenue and taxation of the United State
portion to the wealth and extent of the republic. The custom
and tonnage, form the most productive branch of revenue. I
the customs amounted to 36,306,874 dollars; from that perio
tuated between 13,000,000 and 20,000,000; from 1825 till 18
to 30,000,000; and since the general reduction of the rates o
of 1832 and 1833, they have fallen to about half the last-mentio
great source of revenue is the public domain, or public lands, w
of territory ceded to the general government by the several Stat
territory of Louisiana purchased from France, and of those in F
Spain. After thus acquiring a claim to unoccupied lands from th
from individual powers, the Indian title to the soil is next extin
it from the native tribes by whom it is occupied. The lands are
veyed, according to a general system, so that the whole country
ships of six miles square. Each township is subdivided into th
these are still further subdivided into quarter, half-quarter, and
tions. The lands thus surveyed are offered for sale by proclamat
and by law must be sold by public auction, the minimum upset
and twenty-five cents (about five shillings) an acre, ready mo
each township is reserved for the support of schools; and all s
mines are reserved from sale, unless by special order of the Pre
The amount of revenue derived from these and other minor
the following table: —

Note on Table of State Debts, p. 927.

REVENUE AND EXPENDITURE IN 1839.

(From the Report of the Secretary of the Treasury, December 24th 1839.)

VENUE AND MEANS FOR 1839, EXCLUSIVE OF TRUSTS AND THE POST-OFFICE.

	Dollars.
balance in the Treasury on the t of January 1839, which could considered available for general rposes, was	2,466,961·95
receipts from customs, the first ree quarters, as appearing on e Register's books, are .	18,328,393·50
his includes about two millions and three-fourths collected last year in Treasury notes, but not carried on his books till 1839. From this cause, the actual receipts in this year will, to that extent, appear larger than they ought.	
ipts from Lands the first three arters, including also some col- cted last year in Treasury notes,	5,417,286·31
ellaneous receipts, ...	125,208·78
mated receipts for the fourth arter from all those sources,	5,700,000·00
ipts on some of the debts against nks not available on 1st January 39, but since paid, ...	1,322,686·00
m the third issue of Treasury tes under the act of March 2d 39, ...	3,857,276·21
Aggregate means, .	37,217,812·75

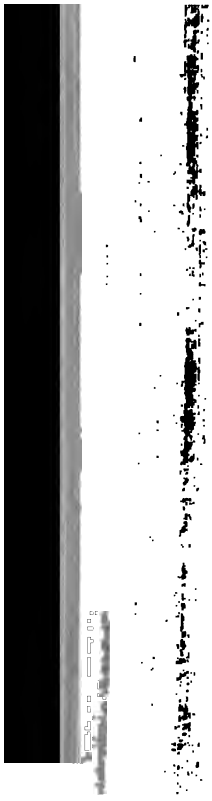
EXPENDITURES FOR 1839, EXCLUSIVE OF THE POST-OFFICE AND TRUSTS.

	Dollars.
Civil, foreign, and miscellaneous, for the first three quarters, .	3,649,508·23
Military, for the first three quarters,	10,791,799·21
Naval, for the first three quarters,	4,713,701·57
Estimate for all, during the fourth quarter, ...	5,600,000·00
Funded debt for the year, . . .	14,658·98
	24,760,667·99
Redemption of Treasury notes in the first three quarters, interest as well as principal, ...	9,891,759·83
This includes two millions and three-fourths paid in for duties and lands last year, but not carried on the Register's books till 1839. From this cause, the expenditures on that account will appear larger by that amount than they actually have been within those quarters.	
Estimated amount of notes redeemed in the fourth quarter, .	1,000,000·00
Aggregate payments, .	35,661,428·72
Leaving an available balance of money in the Treasury, on the 31st of December 1839, of . .	1,556,384·93
	37,217,812·75

he money required for the local expenditure of the several States is raised by the authority of r respective legislatures, and applied at their discretion, without any interference of the general ernment; but of the nature and amount of the public revenue of the several States, our limits ne- arily preclude us from giving any details. The United States have no public debt; but most of separate States have contracted debts to a large amount, generally for the purposes of public rovements. The following table exhibits a statement of these debts, prepared by Mr. Flagg, late ıptroller of the State of New York.

TABLE OF STATE DEBTS.

States.	1. *Amount issued prior to* 1838.	2. *Amount stated as issued and authorized.*	3. *Actual Stock Debt.*— 1839.	4. *Total Stock and Domestic Debt.*
	Dollars.	*Dollars.*	*Dollars.*	*Dollars.*
Maine, ...	554,976	554,976	554,976	554,976
Massachusetts, ...	4,290,000	4,290,000	4,290,000	5,000,000
New York, ...	10,456,152	18,262,406	16,045,631	17,054,976
Pennsylvania, ...	24,140,003	27,306,790	30,784,003	33,016,149
Maryland, ...	8,511,980	11,492,980	15,000,000	15,000,000
Virginia, ...	4,129,700	6,662,089	4,129,700	4,129,700
South Carolina, ...	5,753,770	5,753,770	5,753,770	5,753,770
Ohio, ...	6,101,000	6,101,000	10,552,498	12,019,850
Kentucky, ...	3,185,000	7,369,000	3,765,000	3,765,000
Tennessee, ...	789,166	7,148,166	2,600,000	2,600,000
Louisiana, ...	19,735,000	23,735,000	19,735,000	19,735,000
Alabama, ...	10,800,000	10,800,000	13,882,000	13,882,000
Mississippi, ...	7,000,000	7,000,000	12,000,000	*12,000,000
Indiana, ...	5,438,000	11,890,000	10,064,000	10,064,000
Illinois, ...	5,479,000	11,600,000	10,880,000	11,772,550
Missouri, ...	2,500,000	2,500,000	2,500,000	2,500,000
Arkansas, ...	3,000,000	3,000,000	3,100,000	3,100,000
Michigan, ...	1,840,000	5,340,000	5,340,000	5,340,000
Georgia, ...	....	....	500,000	500,000
Florida, ...	....	....	3,950,000	3,950,000
	123,803,747	170,806,179	175,466,578	181,737,971
Debts of the several States for the U. S. surplus money deposited with them, ...				28,101,641
				209,839,615
City Debts.—New York City, ...			7,516,105	9,352,355
Boston, ...				1,698,232
Philadelphia, ...				1,000,000
Albany, ...				388,187
			184,183,683	222,278,389



bonds issued and lent to corporations, and those issued to procure m
works by the State. In both cases the stock is disposed of in the foreign
be sent from the United States to pay the interest; and it is material to
all loans of credit certificates to incorporations should be at once reco
State debts.

A great proportion of the stock debts embraced in the third column
tracted within the last five years; and during the last ten years, six-seve
the stock has been issued. The State of New York commenced issuing
three years since; and none of the States had issued stock previous to
amounts to satisfy revolutionary claims. The stock issued by the sever
five years since 1820, is as follows:

From 1820 to 1825,	. . . . .
From 1825 to 1830,	. . . . .
From 1830 to 1835,	. . . . .
From 1835 to 1840,	. . . . .

And if to the amount of stock actually issued by the several States
(108,593,392 dollars) be added the sums issued by Florida and the City of
of 120,659,497 of debt actually created within the last five years!

There is a great number of cities in the Union, besides those enumerat
which have contracted debts, the amount of which is unknown. The
has issued its bonds, post-notes, and other evidences of debt, and put the
amount probably of 20,000,000 dollars. There are, also, a class of mone
possess, or have assumed, the right of issuing bonds, and these have bee
Europe, to the amount of several millions of dollars, which form an additi
country. Shares in the capital stock of the Bank of the United States,
companies, are held abroad to the amount of millions of dollars, and the
are to be paid from the resources of this country. If the whole sum on w
paying interest or dividends to foreign capitalists was fairly ascertained
200,000,000 dollars, and the specie drained from the country on this acc
12,000,000 dollars annually. For it is fair to presume, that this sum must b
enterprising character of our countrymen will induce them to import
amount which can be paid for by the surplus products of the country.

The statutes of seven States authorize additional stock to be issued to
dollars, of which sum between seven and eight millions are to be issued
York. If these authorized debts be added to the total of the fourth column in
make an aggregate of 244,000,000 dollars.

From 1830 till the close of 1836, during which time the States borrowed abo
country, to all appearance, was in a state of unprecedented prosperity. The
business men in the land were deluded by the belief, that substantial rich
without that toil and pains-taking which distinguished their frugal ancestor
them as the only process to secure permanent wealth, vigorous constitution

From 1820 till 1830, it is shown by the table of debts, less than twenty-si
stocks were issued. And during the same period the imports from foreig
exports by about 40,000,000 dollars. The exports of specie during this period
several millions of dollars. The sales of lands averaged per year about 1,
exports of flour averaged about 1,000,000 barrels annually. The capital of
Union increased from 137,000,000 dollars in 1820, to 145,000,000 dollars in 1830,
44,800,000 dollars in 1820, to 61,300,000 dollars in 1830.

From 1830 till 1840, say ten years, the amount of stocks issued, including
New York, exceeded 160,000,000 dollars. During the same period, the impo

slave labour than agriculture. The principal agricultural productions of the country have been already mentioned; but no means exist of ascertaining their amount in quantity or value.

§ *Manufactures.*

During the war of the revolution some manufactures sprung up in the States; and, on the adoption of the new constitution, provision was immediately made for the support of the trades, handicrafts, and manufactures of the country, by protecting duties, which are still continued. From the endless variety of soil and climate, which produce in abundance nearly every species of the raw material, and the cheap and inexhaustible supply of moving power furnished by the torrents and rivers, combined with the improvements which are daily making in the best machinery, the United States seem destined ultimately to cope with any other nation in manufacturing industry. At present, however, but a small proportion of the labour of the country is applied to this branch of industry, and only a few of the finer fabrics are produced.

Cottons.—The first cotton mill was erected at Providence, Rhode Island, in 1790; and power-looms were introduced at Waltham in 1815; in 1835, it was estimated that the number of spindles was about 1,700,000; of looms, 48,000; the annual consumption of cotton in the mills from 85 to 90 millions of pounds, and the value of their produce about fifty millions of dollars, or £10,000,000 sterling. The American cotton stuffs are more substantial and durable than the English, and they are in consequence preferred in the foreign markets to which they have been carried. They include sheetings and shirtings, printed calicoes, jeans, carpeting, sail-cloth, &c.

Woollens.—The manufacture of woollens has been carried on in families for domestic use from an early period; but it is only recently that large establishments have been formed for the purpose; some of which are supplied with the most improved machinery. The number of sheep in the United States has been computed, or rather conjectured, at 20,000,000, yielding probably not less than 50,000,000 pounds of wool, and from four to five millions of pounds are imported. The total value of the woollen manufacture cannot be less than from £13,000,000 to £14,000,000 sterling. Among the products are broad cloths, cassimeres, satinets, flannels, blankets, carpets, &c. Five hundred looms produce annually upwards of a million of yards of ingrained Venetian and Brussels carpeting.

Leather, &c.—The leather manufactures, including boots, shoes, saddlery, trunks, &c. are an important branch of industry; and foreign hides to the value of nearly £500,000 are annually consumed. Not only is the home trade supplied, but there is a surplus for exportation. The value of the manufacture is estimated at £9,000,000, and that of hats and caps of wool, fur, and leather, including £200,000 worth of straw-bonnets and palm-leaf hats, is supposed to amount to £3,000,000 annually.

Linens, &c.—Hemp and flax are manufactured in considerable quantities, though the general use of cotton has in a great measure superseded linen as an article of clothing. In 1810, 23,503,590 yards of linen were made in families, and this cloth is still made in that way only. About 4,500,000 yards of bagging for cotton are manufactured annually; and the yearly value of cables and cordage, to the spinning of which very ingenious machinery has been applied in some places, is estimated at £1,000,000. Some sail-cloth is also made.

Glass and paper were early objects of manufacturing industry in the colonies. The value of the produce of the glass furnaces was estimated, in 1831, at £600,000, but is now much larger. The value of the paper made in the United States is estimated to be from £1,000,000 to £1,250,000 annually; which, considering the great consumption of the country, and the small amount imported, would appear to be rather below than above the truth. From the report of the York Convention of the Friends of Domestic Industry, it appears that, in 1831, there were thirty chemical establishments in the United States producing chemical articles used in the arts to the value of £200,000 a-year. The annual value of the cabinet-ware was estimated by the same body at £2,000,000, including a surplus which is produced for exportation. Horn, wood, ivory, and shell combs are made, to the value of about £160,000; and buttons to about the same amount. Both articles are exported.

§ *Fisheries.*

The Fisheries have been pursued by the New Englanders with a rare spirit of hardy enterprise, from an early period. The whale-fishery is prosecuted in the Atlantic Ocean chiefly to the south of the line, for the black whale; and in the Southern, Indian, and Pacific Oceans, for the spermaceti whale. It is carried on chiefly from New

Bedford and Nantucket; and also, but on a smaller scale, from New London, Sag Harbour, Falmouth, Bristol, Hudson, and other places. About 10,000 men are engaged in it, and the seamen are paid, not by fixed wages, but by a certain share in the profits of the voyage. The vessels in the Indian and Pacific Oceans are often absent for two or three years. Seal oil and furs are also obtained in the Antarctic seas. The annual produce exceeds the value of £1,000,000 sterling. The cod fishery is pursued on the banks and coasts of Newfoundland and Labrador, and employs upwards of 60,000 tons of small craft, some of which make several trips a-year. Those engaged in the coast fisheries generally remain longer. The produce of this fishery may be estimated at about £300,000 sterling a-year, about one-half of which is exported. The mackerel fishery employs about 50,000 tons of shipping, and produces about £400,000 annually.

§ *Commerce.*

The commerce of the United States has attained an amazing magnitude; there is no part of the globe which is not visited by American merchantmen; and the foreign trade, the coasting trade, and the inland trade carried on over an unequalled extent of artificial and natural lines of communication, are all on an equal scale. The domestic commerce may be divided into three branches: 1. That which is carried on coastwise, up the bays and large rivers, and on the great lakes in schooners, sloops, and steam-boats. 2. That which is carried on chiefly in steam-boats, but partly in rude flat-bottomed boats, on the Mississippi and its affluents. Of the steam-boats there are said to be upwards of 500 continually plying on these streams; but most of the flat-bottomed boats make but a single voyage down the river, at the end of which they are sold, and broken up for the materials of which they are constructed. The great centre of this trade is New Orleans; which, situate at the only outlet of the great valley, is necessarily the entrepot of all the produce destined for exportation, and of all the foreign articles required to supply the wants of the people of the Western States. 3. The overland trade between the Western and Atlantic States consists principally in hogs, horses, cattle, and mules, which are driven every year to the Atlantic States to the amount of many millions of dollars. But the difficulty of conveyance has hitherto prevented any other return than money. To obviate this disadvantage several canals and railroads have been undertaken, and partly finished, which will be used for the transport of merchandise as well as passengers, across the mountains. The four maritime states of New England are those most devoted to navigation and trade; and Massachusetts, though it contains less than one-twentieth of the population of the United States, owns more than one-fourth of the shipping tonnage. Next to the New Englanders, the people of New York, Pennsylvania, and Maryland, are the most commercial. Such of the inhabitants of those States, and of the Atlantic States to the south of them, as live near the mouths of the rivers, or on the great bays and estuaries, are generally of sea-faring habits. They are extremely skilful in building and managing those fast-sailing schooners and small craft which are perpetually crossing these broad waters in every direction.

The exports consist chiefly of agricultural produce, and the naval stores, lumber, and other productions of the forests. On an average of eight years, from 1803 to 1811, the produce of agriculture constituted about three-fourths in value of all the exports; of the forests, about one-ninth; of the sea, about one-fifteenth; and of manufactures, about one-twentieth; and on the average of ten years, from 1821 to 1830, the produce of agriculture constituted a little more than three-fourths in value of the exports; of manufactures, about one-twelfth; of the forests, about one-thirteenth; and of the sea, about one-thirteenth. The imports consist chiefly of manufactured articles of all sorts, particularly the finer kinds; of tropical productions, as sugar, coffee spices; of tea, hides, wines, spirits, fermented liquors, &c.

1. EXPORTS OF THE PRODUCE OF THE UNITED STATES.

Summary Statement of the Value of the Exports of the Growth, Produce, and Manufacture of the United States, during the Year ending 30th September 1839.

THE SEA.	Dollars.
Fisheries.—	
Dried fish, or cod fisheries,	709,218
Pickled fish, or river fisheries (herring, shad, salmon, mackerel),	141,320
Whale and other fish oil,	515,483
Spermaceti oil,	85,015
Whalebone,	288,790
Spermaceti candles,	178,142
	1,917,969
THE FOREST.	
Skins and Furs,	732,087
Ginseng,	116,904
Products of Wood—	
Staves, shingles, boards, hewn timber,	2,270,603
Other lumber,	327,687
Masts and spars,	37,122
Oak bark, and other dye,	309,696
All manufactures of wood	650,291
Naval stores—	
Tar, pitch, rosin, and turpentine,	688,800
Ashes — pot and pearl,	620,369
	5,764,559
AGRICULTURE.	
Products of Animals—	
Beef, tallow, hides, horned cattle,	371,646
Butter and cheese,	127,550
Pork (pickled), bacon, lard, live hogs,	1,777,230
Horses and mules,	291,625
Sheep,	15,960
Vegetable Food—	
Wheat,	144,191
Flour,	6,925,170
Indian corn,	141,095
Indian meal,	658,421
Rye meal,	145,448
Rye, oats, and other small grain and pulse,	72,050
Biscuit, or ship bread,	349,871
Potatoes,	57,536
Apples,	50,875
Rice,	2,460,198
	13,588,866
Tobacco,	9,832,943
Cotton,	61,238,982
All other agricultural products—	
Flaxseed,	161,896
Hops,	72,425
Brown sugar,	28,722
	263,043
MANUFACTURES.	
Soap and tallow candles,	453,471
Leather, boots and shoes,	173,859
Household furniture,	361,840
Coaches and other carriages,	52,950
Hats,	123,165
Saddlery,	42,743

	Dollars.
Wax,	68,961
Spirits from grain, beer, ale, and porter,	142,085
Snuff and tobacco,	616,212
Lead,	6,003
Linseed oil and spirits of turpentine,	78,757
Cordage,	25,899
Iron—pig, bar, and nails,	134,588
Castings,	61,100
All manufactures of,	748,862
Spirits, from molasses,	183,446
Sugar refined,	521,117
Chocolate,	4,039
Gunpowder,	197,162
Copper and brass,	81,334
Medicinal drugs,	97,418
	4,175,011
Cotton, piece goods—	
Printed and coloured,	412,661
White,	2,525,301
Nankeens,	1,492
Twist, yarn, and thread,	17,465
All manufactures of,	18,114
	2,975,033
Flax and Hemp—	
Cloth and thread,	2,010
Bags, and all manufactures of,	2,047
Wearing apparel,	167,957
Combs and buttons,	37,966
Brushes,	4,186
Billiard-tables and apparatus,	2,504
Umbrellas and parasols,	11,618
Leather and Morocco skins not sold per lb.,	12,952
Printing presses and types,	33,231
Fire engines and apparatus,	2,036
Musical instruments,	7,413
Books and maps,	32,854
Paper and other stationery,	80,149
Paints and varnish,	41,450
Vinegar,	3,745
Earthen and stone ware,	11,645
Manufactures of Glass,	43,448
Tin, pewter, lead, marble, and stone,	40,276
Gold and silver, and gold leaf,	5,264
Gold and silver coin,	1,906,358
Artificial flowers and jewellery,	3,402
Molasses,	3,438
Trunks,	1,965
Bricks and lime,	16,298
Domestic salt,	64,272
	5,515,520
Articles not enumerated—	
Manufactured,	542,909
Other articles,	649,089
	1,236,998
TOTAL EXPORTS,	103,553,891

2. VALUE OF DIFFERENT ARTICLES IMPORTED.

Value of Goods, Wares, and Merchandise Imported into the United States, during the Year ending 30th September 1839.

Species of Merchandise. FREE OF DUTY.	*Value in Dollars.*
Articles for the use of the United States,	489
Articles for Philosophical Societies, &c.	
Philosophical apparatus,	10,168
Books, maps, and charts,	43,383
Statuary, busts, casts, &c.,	2,330
Paintings, drawings, etchings, and engravings,	4,542
Specimens of botany,	5,087
Models and inventions of machinery,	15
Anatomical preparations,	1,356

Species of Merchandise.	*Value in Dollars.*
Antimony, regulus of,	13,667
Spelter, or zinc,	136,905
Buhrstones, unwrought,	46,417
Brimstone and sulphur,	101,164
Bark of the cork tree,	6,544
Clay, unwrought,	6,737
Rags of any kind of cloth,	568,318
Undressed furs,	881,735
Hides and skins, raw,	3,158,029
Plaster of Paris,	127,714

2. VALUE OF DIFFERENT ARTICLES IMPORTED—(Continued.)

Species of Merchandise.	Value in Dollars.
Barilla,	128,627
Wood, Dye,	225,420
Wood, Mahogany, unmanufactured,	304,225
Animals, for breed,	40,224
Animals, Other,	261,226
Old pewter,	44
Tin, In pigs and bars,	268,089
Tin, In plates and sheets,	1,145,183
Brass, In pigs and bars,	1,230
Brass, Old,	1,227
Copper, In pigs and bars,	1,118,165
Copper, In plates, suited to sheathing of ships,	619,486
Copper, Old, fit only for remanufacture,	61,242
Bullion, Gold,	86,540
Bullion, Silver,	149,680
Specie, Gold,	1,078,040
Specie, Silver,	4,280,916
Tea from India, China, &c.,	2,424,594
Coffee,	9,744,103
Cocoa,	75,838
Fruits, Almonds,	170,641
Fruits, Currants,	56,749
Fruits, Prunes,	60,216
Fruits, Figs,	68,457
Fruits, Raisins, Muscatel,	802,068
Fruits, Other,	187,497
Spices, Mace,	14,513
Spices, Nutmegs,	278,499
Spices, Cinnamon,	82,627
Spices, Cloves,	101,964
Spices, Pepper,	185,053
Spices, Pimento,	144,629
Spices, Cassia,	32,519
Spices, Ginger,	12,823
Camphor,	15,286
Silks, Other than India, viz. Lace veils, shawls, shades, &c.,	345,490
Silks, Other manufactures of,	18,085,206
Manufactures of silk and worsted,	2,219,894
Camlets of goat's hair, or camel's hair, &c.	128,289
Worsted stuff goods,	7,025,8[illegible]8
Linens bleached and unbleached,	6,731,278
Ticklenburgs, Osnaburgs, and burlaps,	452,269
Sheetings, brown and white,	535,789
Bolting cloths,	64,2[illegible]3
Wool, not exceeding 8 cents. per lb.,	527,620
Quicksilver,	345,660
Opium,	214,975
Crude Saltpetre,	369,152
Other articles,	8,707,402
TOTAL,	76,401,792

MERCHANDISE PAYING DUTIES AD VALOREM.

Manufactures of Wool—	
Cloths and cassimeres,	7,078,906
Merino shawls,	282,467
Blankets not above 75 cents each,	821,889
Blankets, above 75 cents each,	534,197
Hosiery, gloves, mits, and bindings,	1,037,096
Articles not specified,	522,554
Woollen yarn,	156
Worsted yarn,	368,802
Manufactures of Cotton—	
Dyed, printed, and coloured,	9,000,216
White,	2,154,931
Hosiery, gloves, mits, and bindings,	1,879,783
Twist, yarn, and thread,	779,004
Nankeens, direct from China,	2,772
Articles not specified,	674,691
Silks, From India, China, &c., Piece goods,	1,738,509
Silks, Sewing silk,	50,650
Silk, sewing, from other places,	818,884
Thread and cotton lace,	1,213,672
Flaxen Goods—	
Dyed or coloured linens, checks, &c.	208,708
Other manufactures of flax,	763,079
Hempen Goods—	
Sail duck,	760,199
Other manufactures of hemp,	97,436
Hats and Bonnets—	
Leghorn, straw, &c.,	941,963
Fur, wool and leather,	14,[illegible]22
Manufactures of Iron—	
side-arms,	23,[illegible]35
Fire-arms, not specified,	203,[illegible]31
Drawing-knives,	15,[illegible]38
Cutting-knives,	14,[illegible]60
Hatchets, axes, adzes, &c.,	7,[illegible]38
Socket-chisels,	25,[illegible]60
Steelyards, &c.,	23,[illegible]36
Vises,	21,[illegible]35
Sickles, or reaping-hooks,	7,[illegible]35
Scythes,	67,[illegible]36
Spades and shovels,	17,[illegible]71
Squares of iron,	6,[illegible]37
Wood-screws,	105,[illegible]39
Articles not specified,	4,[illegible]60
Manufactures of—	
Copper,	159,[illegible]56
Brass,	235,[illegible]26
Tin,	24,[illegible]87
Pewter,	25,[illegible]60
Lead,	7,[illegible]38
Wood, cabinet-ware,	122,[illegible]65
Other articles,	233,[illegible]35
Leather,	1,[illegible]37
Marble,	11,[illegible]38
Gold, silver, precious stones, set or otherwise,	235,[illegible]70
Watches, and parts of,	732,[illegible]84
Glassware—	
Cut and not specified,	69,[illegible]45
Plain and other,	220,[illegible]93
Other manufactures of,	221,[illegible]61
Wares—	
China and porcelain,	231,[illegible]31
Earthen and stone,	2,[illegible]87
Plated, not specified,	224,[illegible]87
Gilt,	62,[illegible]60
Japanned,	65,[illegible]47
Saddlery—	
Common, tinned, japanned,	122,[illegible]89
Plated, brass, polished steel,	220,[illegible]21
Coach and harness furniture,	13,[illegible]38
Carriages, and parts of,	2,[illegible]70
Slates of all kinds,	62,[illegible]61
Prepared quills,	21,[illegible]97
Black-lead pencils,	6,[illegible]48
Paper-hangings,	100,[illegible]74
Hair-cloth and hair-seating,	105,[illegible]35
Brushes of all kinds,	71,[illegible]08
Copper bottoms, cut round, &c.,	2,[illegible]50
Braziers' copper,	1,[illegible]37
Silvered or plated wire,	7,[illegible]30
Sheet and rolled brass,	[illegible]49
Raw silk,	30,[illegible]50
Indigo,	1,171,644
Wool, unmanufactured, exceeding 8 cents per lb.,	171,[illegible]14
Articles not enumerated, 5 per cent.,	65,[illegible]32
Do. 10 do.	1,[illegible]30
Do. 12 do.	4,[illegible]61
Do. 12½ do.	322,[illegible]40
Do. 15 do.	1,474,[illegible]66
Do. 20 do.	1,[illegible]27
Do. 25 do.	1,485,[illegible]65
Do. 30 do.	65,[illegible]30
Do. 35 do.	1,[illegible]11
Do. 40 do.	[illegible]33
Do. 50 do.	487,[illegible]24
TOTAL,	30,540,409

MERCHANDISE PAYING SPECIFIC DUTIES.

Flannels,	172,753
Bockings and baizes,	118,630
Carpeting—	
Brussels, Wilton, &c.,	414,809
Other ingrained and Venetian,	197,798
Floor-cloth, patent, printed or painted,	31,733
Furniture oil-cloth,	21,892
Cotton bagging,	230,023
Wine—	
Madeira,	585,759
Red of France, in casks,	450,714
Other of France, in casks,	136,942
Of France, in bottles, &c.	830,524

2. VALUE OF DIFFERENT ARTICLES IMPORTED—(CONTINUED.)

Species of Merchandise.	*Value in Dollars.*
Sicily,	134,529
Sherry,	240,561
Red of Spain and Austria,	39,886
Other of Spain, Austria, Germany, and the Mediterranean,	405,353
Of other countries, in casks,	566,527
Do. in bottles,	61,002
Spirits from grain,	536,096
Do. other materials,	1,686,331
Molasses,	4,364,234
Vinegar,	16,842
Beer, ale, and porter, in casks,	13,422
Do. in bottles,	225,538
Oil—	
Spermaceti,	109,304
Whale, and other fish,	112,821
Olive,	295,197
Castor,	23,560
Linseed,	711,389
Rapeseed,	59
Teas, from other places than India, China, &c.	3,825
Chocolate,	1,598
Sugar—	
Brown,	8,951,371
White, clayed, or powdered,	968,131
Loaf,	46
Candy,	58
Other refined,	5,026
Cayenne pepper,	5
Candles—	
Tallow,	13,872
Wax or spermaceti,	891
Cheese,	21,147
Soap,	48,528
Tallow,	50,632
Lard,	1,437
Beef and pork,	23,734
Bacon,	32,539
Butter,	17,519
Saltpetre,	2,591
Salts, Epsom,	1,560
Vitriol, blue or Roman,	14
Oil of,	39
Tobacco, manufactured—	
Snuff,	1,870
Cigars,	1,026,740
Other than snuff and cigars,	3,661
Cotton,	287,435
Gunpowder,	9,747
Bristles,	195,026
Glue,	3,990
Dry ochre,	26,333
Ochre, in oil,	627
White and red lead,	50,906
Whiting and Paris white,	2,485
Litharge,	188
Orange mineral,	11
Sugar of lead,	25,845
Lead, Pig, bar, and sheet,	18,631
Lead, Shot,	1,191
Lead, Leaden pipes,	16
Lead, Old,	918
Cordage, Tarred and cables,	106,902
Cordage, Untarred and yarn,	2,331
Twine and packthread,	148,366
Corks,	53,437
Copper nails and spikes,	843
Fire-arms, Muskets,	8,438
Fire-arms, Rifles,	1,086
Iron and steel wire, cap and bonnet,	3,899
Iron and steel wire, not above No. 14,	32,133
Iron and steel wire, above No. 14,	12,651
Tacks, Brads, and sprigs—	
Not above 16 ounces per thousand,	814
Above 16 ounces per thousand,	288

Species of Merchandise.	*Value in Dollars.*
Iron—	
Nails,	140,889
Spikes,	24,957
Cables and chains,	143,979
Mill saws,	7,385
Anchors,	16,347
Anvils,	71,087
Blacksmiths' hammers, &c.,	6,126
Castings, vessels of,	16,020
Castings, all other,	63,720
Braziers' rods,	27,942
Nail or spike rods,	2,291
Sheet and hoop,	354,933
Band, scroll, &c.,	886
Pig,	285,309
Old and scrap,	10,161
Bar, rolled,	3,181,189
Bar, otherwise,	2,054,094
Steel,	771,804
Hemp,	607,766
Alum,	1,123
Copperas,	10
Wheat Flour,	22,477
Salt,	887,092
Coal,	415,761
Wheat,	35,279
Oats,	2,313
Potatoes,	96,326
Paper—	
Folio and quarto post,	22,668
Cap, drawing, and writing,	29,699
Printing, and copperiate and stainers',	2,242
Sheathing, &c., binders', wrapping, &c.	2,006
All other,	28,719
Books—	
Printed previous to 1775,	7,377
In other languages than Greek, Latin, and English,	98,789
In Greek and Latin, bound,	2,884
Do. unbound,	2,200
All other, bound,	51,532
Do. unbound,	124,154
Apothecaries' vials, &c., not exceeding 6 ounces each,	1,083
Apothecaries' vials, &c., exceeding 6, not above 16 ounces,	567
Perfumery and fancy vials and bottles, not above 4 ounces each,	1,623
Perfumery and fancy vials and bottles, above 4, but not above 16 ounces each,	450
Demijohns,	14,609
Bottles—	
Black, not above 1 quart,	178,650
Above 1 quart,	115
Window Glass—	
Not above 8 by 10 inches,	9,251
Above 8 by 10, and not above 10 by 12 inches,	21,843
Above 10 by 12 inches,	74,687
Fish, Dried,	24,303
Fish, Salmon,	73,766
Fish, Mackerel,	60,374
Fish, All other,	71,489
Playing cards,	189
Boots and bootees,	52,223
Shoes, Silk,	5,391
Shoes, Prunella,	795
Shoes, Leather,	44,680
Shoes, Children's,	823
Felts or hat bodies,	209
Total value of Merchandise paying specific duties,	35,149,931
Do. do. ad valorem,	50,540,409
Do. do. free of duty,	76,401,792
Total value,	162,092,132

3. IMPORTS FROM, AND EXPORTS TO, FOREIGN COUNTRIES.

Table, exhibiting the Value of Imports from, and Exports to, each Foreign Country, during the Year ending 30th September 1839.

	Countries.	Value of Imports.	Value of Exports.		
			Domestic Produce.	Foreign Produce.	TOTAL.
		Dollars.	Dollars.	Dollars.	Dollars.
1	Russia,	2,393,894	434,587	804,659	1,239,246
2	Prussia,	70,412	29,313	43,500	72,813
3	Sweden and Norway,	1,553,684	337,000	26,502	363,502
4	Swedish West Indies,	12,458	103,282	4,130	107,412
5	Denmark,	80,997	50,634	38,177	88,811
6	Danish West Indies,	1,465,761	1,014,381	303,154	1,317,535
7	Hanse Towns and Ports of Germany,	4,849,150	2,067,608	733,459	2,801,067
8	Holland,	2,149,732	1,677,352	295,651	1,973,003
9	Dutch East Indies,	692,196	86,619	396,934	483,553
10	Dutch West Indies,	582,284	282,042	70,975	353,017
11	Dutch Guiana,	49,008	58,863	2,803	61,666
12	Belgium,	465,701	541,641	66,269	607,910
13	England,	64,863,716	54,615,327	3,953,108	58,568,435
14	Scotland,	950,183	1,025,832	1,256	1,027,088
15	Ireland,	150,689	330,719	....	330,719
16	Gibraltar,	99,178	902,247	148,387	1,050,634
17	Malta,	24,943	65,870	34,126	99,996
18	Mauritius,	....	30,466	1,500	31,966
19	Cape of Good Hope,	43,059	88,379	5,020	93,399
20	British East Indies,	2,135,152	246,845	337,597	584,442
21	British West Indies,	941,699	2,472,833	90,642	2,563,475
22	British Guiana,	14,215	34,906	218	35,124
23	British Honduras,	164,027	181,861	29,339	211,200
24	British North American Colonies,	2,155,146	3,418,770	144,684	3,563,454
25	Australia,	58,344	6,790	....	6,790
26	Other British Colonies,	....	....	2,360	2,360
27	France on the Atlantic,	30,918,450	14,919,848	2,088,655	17,008,503
28	France on the Mediterranean,	1,612,871	1,041,260	176,186	1,222,446
29	French West Indies,	702,798	585,916	105,905	691,821
30	French Guiana,	....	1,643	....	1,643
31	Spain on the Atlantic,	263,193	316,144	32,014	348,158
32	Spain on the Mediterranean,	1,597,978	209,724	19,000	228,724
33	Teneriffe and other Canaries,	196,755	15,572	11,939	27,511
34	Manilla and Philippine Islands,	876,477	98,553	38,255	137,808
35	Cuba,	12,599,843	5,025,626	1,091,205	6,116,831
36	Porto Rico,	3,742,549	779,049	87,348	866,397
37	Portugal,	587,778	59,711	6,093	65,804
38	Madeira,	539,800	64,082	15,046	79,128
39	Fayal and the other Azores,	15,222	9,130	4,739	13,869
40	Cape de Verde Islands,	39,523	77,138	8,415	85,553
41	Italy,	1,182,297	315,399	122,753	438,152
42	Sicily,	592,951	192,462	84,607	277,069
43	Sardinia,	1,348	....	....	....
44	Trieste,	477,539	429,578	162,671	592,249
45	Turkey, Levant, &c.,	629,190	83,320	566,054	349,374
46	Morocco and Barbary States,	96,493	....	....	....
47	Hayti,	1,377,989	991,265	131,294	1,122,559
48	Texas,	318,116	1,379,065	308,017	1,687,082
49	Mexico,	3,127,153	816,660	1,970,702	2,787,362
50	Central Republic of America,	192,845	111,752	104,490	216,242
51	New Granada,	90,514	35,219	29,585	64,804
52	Venezuela,	1,982,702	413,245	272,736	685,981
53	Brazil,	5,292,955	2,133,997	503,488	2,637,485
54	Cisplatine Republic,	625,432	50,998	38,302	89,300
55	Argentine Republic,	525,114	233,593	142,470	376,063
56	Chili,	1,186,641	1,307,143	487,410	1,794,553
57	Peru,	242,813	....	....	....
58	South America, generally,	....	23,618	27,257	50,875
59	China,	3,678,509	430,464	1,103,137	1,533,601
60	Europe, generally,	....	128,105	....	128,105
61	Asia, generally,	63,525	158,321	400,431	558,752
62	Africa, generally,	419,054	443,218	47,061	490,279
63	West Indies, generally,	....	457,968	33,060	491,028
64	South Seas,	318,143	85,938	39,750	125,688
65	Atlantic Ocean,	....	....	....	....
66	Uncertain places,	11,944	....	....	....
	TOTAL,	169,092,132	103,533,891	17,494,525	121,028,416

4. IMPORTS AND EXPORTS OF EACH STATE.

Imports and Exports of each State and Territory, during the Year ending 30th September 1839.

States and Territories.	Value of Imports.			Value of Exports.		
	In American vessels.	In Foreign vessels.	TOTAL.	Domestic Produce.	Foreign Produce.	TOTAL.
	Dollars.	Dollars.	Dollars.	Dollars.	Dollars.	Dollars.
Maine,	839,336	143,388	982,724	878,434	17,051	895,485
N. Hamp.,	50,665	742	51,407	74,914	7,030	81,944
Vermont,	413,513	....	413,513	193,886	....	193,886
Massachusetts,	18,622,681	762,542	19,385,223	5,526,455	3,749,630	9,276,085
R. Island,	610,431	1,626	612,057	175,808	9,426	185,234
Connecticut,	442,847	3,344	446,191	583,226	....	583,226
New York,	88,360,867	11,521,571	99,882,438	23,296,995	9,971,104	33,268,099
New Jersey,	3,782	400	4,182	78,434	19,645	98,079
Pennsylvania,	14,023,150	1,027,565	15,050,715	4,148,211	1,151,204	5,299,415
Delaware,	....	....	....	8,680	....	8,680
Maryland,	6,079,985	915,300	6,995,285	4,313,189	263,372	4,576,561
D. of Columb.,	105,921	26,590	132,511	497,965	5,752	503,717
Virginia,	828,300	85,162	913,462	5,183,424	3,772	5,187,196
N. Carolina,	217,304	11,929	229,233	426,934	992	427,926
S. Carolina,	2,210,635	875,442	3,086,077	10,318,822	66,604	10,385,426
Georgia,	293,745	120,242	413,937	5,970,443	....	5,970,443
Alabama,	614,849	280,352	895,401	10,338,159	....	10,338,159
Mississippi,	....	....	....	....	....	....
Louisiana,	9,723,230	2,341,712	12,064,942	30,995,936	2,185,231	33,181,167
Ohio,	14,309	4,971	19,280	95,854	....	95,854
Kentucky,	10,480	....	10,480	3,723	....	3,723
Tennessee,	146	....	146	....	....	....
Michigan,	174,169	2,052	176,221	133,305	....	133,305
Florida,	186,942	92,950	279 893	291,094	43,712	334,806
Missouri,	46,964	....	46,964	....	....	....
TOTAL,	143,874,252	18,217,880	162,092,132	103,533,891	17,494,525	121,028,416

5. TONNAGE OF THE SEVERAL STATES AND TERRITORIES *on the 30th September* 1839.

Tons and 95ths.		*Tons and 95ths.*		*Tons and 95ths.*	
Maine,	282,285.37	Pennsylvania,	112,359.17	Louisiana,	109,076.36
N. Hamp.,	29,224.07	Delaware,	19,203.19	Tennessee,	4,240.94
Vermont,	4,232.37	Maryland,	116,203.87	Kentucky,	8,125.87
Mass.	526,364.21	Virginia,	51,808.39	Ohio,	23,925.56
R. Island,	44,572.16	N. Carolina,	40,841.45	Michigan,	10,909.50
Connecticut,	83,014.34	S. Carolina,	33,414.21	Missouri,	9,735.00
New York,	468,593.58	Georgia,	20,942.83	D. of Columb.	23,142.26
New Jersey,	72,540.87	Alabama,	21,742.00	Florida,	8,672.68

Total United States' Tonnage in 1815, 1,368,127.78; in 1820, 1,280,166.24; in 1825, 1,423,110.77; in 1830, 1,191,776.43; in 1835, 1,824,940.14; in 1839, 2,096,478.81.

TONNAGE OF THE SIX LARGEST DISTRICTS.

New York,	430,300.88	New Orleans,	109,076.36	New Bedford,	86,524.75
Boston,	263,615.82	Philadelphia,	96,862,09	Baltimore,	71,533.14

BANKING SYSTEM.—The Banking institutions of the United States are joint-stock companies, with fixed capitals, incorporated by the respective States; they are all banks of circulation, and their bills form the principal circulating medium of the country. Since President Jackson withdrew the charter from the National Bank of the United States at Philadelphia, the Union has been inundated with bank-notes of the value of a dollar and upwards, without any efficient machinery for regulating the exchange of them; and as New York is the centre of a vast commerce, notes of banks in every degree of credit, and whose head-quarters, where alone they are payable in specie, lie at every degree of distance, are there in circulation. The profession of bill-broker has in consequence sprung up to meet the wants of society, and appears to be at once an extensive and a lucrative employment. Pamphlets are published containing lists of all the banks in the Union and in Canada, and stating the value of their notes; and columns nearly a yard long and in small type, may be seen in some of the New York newspapers, embodying the same information. In short, it has become a science nearly as extensive and difficult as entomology or conchology to know the value of the currency of this great country.—(*Combe's Notes*, I. 26.) The over-issue of notes by so many banks has fostered speculation to an extreme degree, and placed the trade of the country on a most unstable footing; and, to aggravate the evil, most of the banks have of late suspended the payment of their notes in specie.

COMPARATIVE VIEW OF THE CONDITION OF ALL THE BANKS IN THE UNITED STATES,

Near the Commencement of each Year, from 1834 to 1840, inclusive.

	According to Returns nearest January 1.						
	1834.	1835.	1836.	1837.	1838.	1839.	1840.
Number of Banks from which returns have been received,	406	515	559	632	663	662	661
Number of Branches from which returns have been received,	..	141	146	154	166	178	139
Number of Banks, the affairs of which have been estimated for want of returns,	100	43	8	2	..	..	61
Number of Branches, the affairs of which have been estimated, for want of returns,	..	5	..	..	..	..	40
Whole number of Banks and Branches in operation,	506	704	713	788	829	840	901
	Dollars.	*Dollars.*	*Dollars.*	*Dollars.*	*Dollars.*	*Dollars.*	*Dollars.*
Capital paid in,	200,005,944	231,250,537	251,875,292	290,772,091	317,636,778	327,132,512	358,442,692
Loans and Discounts,	324,119,499	365,163,834	457,506,080	525,115,702	485,631,687	492,278,015	462,896,523
Stocks,	6,113,195	9,210,579	11,709,319	12,407,112	33,908,604	36,128,464	42,411,750
Real Estate,	10,850,090	11,140,167	14,194,375	19,064,451	19,075,731	16,607,832	29,181,919
Other Investments,	1,723,547	4,642,224	9,975,226	10,423,630	24,194,117	28,352,248	24,592,580
Due from other Banks,	27,329,645	40,084,038	51,876,955	59,663,910	58,195,153	52,898,357	41,140,184
Notes of other Banks on hand,	22,154,919	21,086,301	32,115,138	36,533,527	24,964,257	27,372,966	20,797,892
Specie Funds,	26,641,753	3,061,819	4,800,076	5,366,500	904,006	3,612,567	3,623,874
Specie,	..	43,937,625	40,019,594	36,915,340	35,184,112	45,132,673	33,105,155
Circulation,	94,839,570	103,692,495	140,301,038	149,185,890	116,138,910	135,170,995	106,968,572
Deposits,	75,666,986	83,081,365	115,104,440	127,397,185	84,691,184	90,240,146	75,696,857
Due to other Banks,	26,602,293	38,972,578	50,402,369	62,421,118	61,015,692	53,135,508	44,159,615
Other Liabilities,	..	19,320,475	25,929,234	36,560,289	59,295,679	62,946,248	43,275,183
Aggregate of Bank Accounts,	816,047,441	974,643,887	1,205,879,136	1,372,826,745	1,321,535,910	1,371,008,531	1,286,292,796
Aggregate of Investments supposed to yield income,	342,806,331	390,156,804	493,385,000	567,010,895	561,780,319	573,366,559	559,082,772
Excess of such Investments beyond amount of capital paid in,	142,800,387	158,906,467	241,509,708	276,238,804	243,180,261	246,234,047	200,640,080
Aggregate of Deposits and Circulation,	170,506,556	186,773,860	255,405,478	276,583,075	200,830,094	225,411,141	182,665,429
Aggregate of Deposits, Circulation, and sums due to other Banks,	197,108,849	225,746,438	305,807,847	339,004,193	261,845,686	278,546,649	226,825,044
Aggregate of Specie, Specie Funds, Notes of other Banks, and sums due by other Banks,	76,126,317	108,169,783	128,811,763	139,479,277	119,247,428	129,016,563	98,667,105
Excess of immediate Liabilities beyond immediate Means,	120,982,532	117,576,655	176,996,084	199,524,916	142,598,258	149,530,086	128,157,939
Total of Means of all kinds,	418,932,648	498,326,587	622,196,763	706,490,172	704,358,577	702,383,122	657,749,877
Total of Liabilities exclusive of those to Stockholders,	197,108,849	245,066,913	331,807,081	375,564,482	321,823,365	341,492,897	270,100,227
Total of Liabilities of the Banks to one another,	76,086,857	100,142,917	134,384,426	158,618,555	144,175,092	133,406,831	106,097,691
Total of Liabilities to all, except other Banks and Stockholders,	121,121,992	144,923,996	281,404,712	313,143,364	260,925,775	288,357,389	270,100,227
Net Circulation,	72,684,651	82,606,194	108,185,909	112,692,563	91,174,653	107,798,029	86,170,680

INTERNAL COMMUNICATIONS.—Besides numerous roads of the ordinary construction, few of which are very good, lakes, and navigable rivers, the United States now possess a series of canals and railways, of which we present a condensed summary in the following table: —

A CONDENSED SUMMARY OF THE CANALS AND RAILROADS IN THE UNITED STATES; WITH THEIR LENGTHS AND TERMINATING POINTS.

Name.				*Length in Miles.*
MAINE.—*Canal*,—				
Cumberland and Oxford	*from*	Near Portland,	*to* Long Pond,	20.50
Railroad,—				
Bangor and Orono,	„	Bangor,	„ Orono,	10.00
NEW HAMPSHIRE.—*Canals*,—				
Bow Falls,	„	. . . . .	„	0.75
Hooksct Falls,	„	. . . . .	„	0.13
Amoskeag Falls,	„	. . . . .	„	1.00
Union,	„	. . . . .	„	9.00
Sewall's Falls,	„	. . . . .	„	0.25
Railroads,—				
Eastern,	„	Massachusets Line,	„ Portsmouth,	15.47
Nashua and Lowell,	„	Do. do.	„ Nashua,	5¼
Boston and Maine,	„	Do. do.	„ Exeter,	14.00
VERMONT.—*Canals*,—				
White River Falls,	„	. . . . .	„	0.50
Bellows Falls,	„	. . . . .	„	0.16
Wat:rquechy,	„	. . . . .	„	0.40
MASSACHUSETS.—*Canals*,—				
Middlesex,	„	Boston,	„ Chelmsford,	27.00
Pawtucket,	„	Lowell,	„	1.59
Blackstone,	„	Providence,	„ Worcester,	45.00
Hampshire and Hampden,	„	Connecticut Line,	„ Northampton,	22.00
Montague Falls,	„	. . . . .	„	3.00
South Hadley Falls,	„	. . . . .	„	2.00
Railroads,—				
Eastern,	„	Boston,	„ N. Hampshire Line,	38.00
Boston and Lowell,	„	Boston,	„ Lowell,	26.00
Boston and Portland,	„	Wilmington,	„ N. Hampshire Line,	20.00
Lowell and Nashua,	„	Lowell,	„ N. Hampshire Line,	9.00
Charlestown,	„	Charlestown,	„	1½
Boston and Worcester,	„	Boston,	„ Worcester,	45.00
Millbury Branch,	„	. . . . .	„ Millbury,	3½
Western	„	Worcester,	„ West Stockbridge,	116.00
Boston and Providence,	„	Boston,	„ Providence,	41.00
Dedham Branch,	„	. . . . .	„ Dedham,	2.00
Taunton Branch,	„	Mansfield,	„ Taunton,	11.00
Taunton and New Bedford,	„	Taunton,	„ New Bedford,	20.00
Norwich and Worcester,	„	Worcester,	„ Connecticut Line,	20.00
Quincy,	„	Granite Quarry,	„ Quincy Landing,	3.00
RHODE ISLAND.—*Railroad*,—				
Providence and Stonington,	„	Providence,	„ Stonington,	47.00
CONNECTICUT.—*Canals*,—				
Farmington,	„	New-Haven,	„ Massachusetts Line,	56.00
Enfield Falls,	„	. . . . .	„	5.50
Railroads,—				
Norwich and Worcester,	„	Norwich,	„ Worcester,	58.50
New Haven and Hartford,	„	New-Haven,	„ Hartford,	36.00
Housatonic,	„	Bridgeport,	„ New Milford,	35.00
NEW YORK.—*Canals*,—				
Erie,	„	Albany,	„ Buffalo,	363.00
Champlain,	„	West Troy,	„ Whitehall,	76.00
Chenango,	„	Utica,	„ Binghamton,	97.00
Black River,	„	Rome,	„ Carthage,	85.00
Oswego,	„	Syracuse,	„ Oswego,	38.00
Cayuga and Seneca,	„	Seneca Lake,	„ Cayuga Lake,	23.00
Crooked Lake,	„	Pennyan,	„ Seneca Lake,	7.75
Chemung,	„	Seneca Lake,	„ Elmira,	23.00
Branch of Chemung,	„	Elmira,	„ Knoxville,	16.00
Delaware and Hudson,	„	Eddyville,	„ Lackawaxen,	63.00
Genesee Valley,	„	Rochester,	„ Olean,	119.63
Dansville Branch,	„	Mount Morris,	„ Dansville,	11.00
Harlem,	„	Hudson River,	„ East River,	3.00
Croton Aqueduct,	„	Croton River,	„ New York,	40.56
Railroads,—				
Long Island.	„	Brooklyn,	„ Hicksville,	27.00
Harlem,	„	New York,	„ Harlem,	8.00
Hudson and Berkshire,	„	Hudson	„ West Stockbridge,	33.00
Catskill and Canajoharie,	„	Catskill,	„ Canajoharie	78.00
Rensselaer and Saratoga,	„	Troy,	„ Ballston,	23.50
Mohawk and Hudson,	„	Albany,	„ Schenectady,	15.86
Saratoga and Schenectady,	„	Schenectady,	„ Saratoga,	21.50
Utica and Schenectady,	„	Schenectady,	„ Utica,	77.00
Syracuse and Utica,	„	Utica,	„ Syracuse,	53.00
Syracuse and Auburn,	„	Syracuse,	„ Auburn,	26.00
Auburn and Rochester,	„	Auburn,	„ Rochester,	80.00
Tonawanda,	„	Rochester,	„ Attica,	45.00

Name.					
New York.—*Railroads*, (continued).—					
Buffalo and Niagara Falls	*from*	Buffalo,	*to*	Niagara Falls,	
Lockport and Niagara Falls,	„	Lockport,	„	Niagara Falls,	
Buffalo and Black Rock,	„	Buffalo,	„	Black Rock,	
Rochester,	„	Rochester,	„	Port Genesee,	
Ithaca and Oswego,	„	Ithaca,	„	Oswego,	
Bath,	„	Bath,	„	Crooked Lake,	
Port Kent and Keesville,	„	Port Kent,	„	Keesville,	
New Jersey.—*Canals*,—					
Delaware and Raritan,	„	Bordentown,	„	New Brunswick,	
Morris,	„	Jersey City,	„	Easton, Pa.	
Salem,	„	Salem Creek,	„	Delaware River,	
Railroads,—					
Camden and Amboy,	„	Camden,	„	South Amboy,	
Trenton Branch,	„		„	Trenton,	
Jobstown Branch,	„	Jobstown,	„	Craft's Creek,	
Paterson and Hudson,	„	Jersey City,	„	Paterson,	
Camden and Woodbury,	„	Camden,	„	Woodbury,	
New Jersey,	„	Jersey City,	„	New Brunswick,	
Trenton and Brunswick,	„	Trenton,	„	New Brunswick,	
Morris and Essex,	„	Newark,	„	Morristown,	
Elizabethport and Somerville	„	Elizabethport,	„	Somerville,	
Pennsylvania.—*Canals*,—					
Penn. Canals. Central Division,	„	Columbia,	„	Hollidaysburg,	
Penn. Canals. Western Division,	„	Johnstown,	„	Pittsburg,	
Penn. Canals. Susquehanna Division,	„	Duncan's Island,	„	Northumberland	
Penn. Canals. West Branch Division,	„	Northumberland,	„	Farrandsville,	
Penn. Canals. North Branch Division,	„	Northumberland,	„	Lackawana,	
Penn. Canals. Delaware Division,	„	Bristol,	„	Easton,	
Penn. Canals. Beaver Division,	„	Beaver,	„	Shenango River,	
Schuylkill Navigation,	„	Philadelphia,	„	Port Carbon,	
Union,	„	Reading,	„	Middletown,	
Lehigh,	„	Easton,	„	Stoddartsville,	
Lackawaxen,	„	Delaware River,	„	Honesdale,	
Conestoga,	„	Lancaster,	„	Safe Harbor,	
Codorus,	„	York,	„	Susquehanna River,	
Bald Eagle,	„	West Branch Canal,	„	Bellefonte,	
Susquehanna,	„	Wrightsville,	„	Havre de Grace,	
Minor Canals,	„		„		
Railroads,—					
Columbia and Philadelphia,	„	Philadelphia,	„	Columbia,	
Portage,	„	Hollidaysburg,	„	Johnstown,	
Philadelphia City, &c.	„		„		
Valley,	„	Norristown,	„	Columbia Railroad,	
West Chester,	„	Columbia Railroad,	„	West Chester,	
Harrisburg and Lancaster,	„	Harrisburg,	„	Lancaster,	
Cumberland Valley,	„	Harrisburg,	„	Chambersburg,	
Franklin,	„	Chambersburg,	„	Williamsport,	
York and Wrightsville	„	York,	„	Wrightsville,	
Strasburg,	„	Cumberl. Val. R. R.	„	Strasburg,	
Philadelphia and Reading,	„	Philadelphia,	„	Pottsville,	
Little Schuylkill,	„	Port Clinton,	„	Tamaqua,	
Danville and Pottsville,	„	Pottsville,	„	Sunbury,	
Little Schuyl. and Susquehanna,	„	Tamaqua,	„	Williamsport,	
Beaver Meadow Branch,	„	Lindner's Gap,	„	Beaver Mead. R. R.	
Williamsport and Elmira,	„	Williamsport,	„	Elmira,	
Corning and Blossburg,	„	Blossburg,	„	Corning,	
Mount Carbon,	„	Mount Carbon,	„	Norwegian Creek	
Schuylkill Valley,	„	Port Carbon,	„	Tuscarora,	
Branches of Schuyl. Valley,	„		„		
Schuylkill,	„	Schuylkill,	„	Valley,	
Mill Creek,	„	Port Carbon,	„	Coal Mine,	
Mine Hill and Schuyl. Haven,	„	Sch. Haven,	„	Mine Hill Gap,	
Mauch Chunk,	„	Mauch Chunk	„	Coal Mine,	
Branches of Mauch Chunk,	„		„		
Room Run,	„	Mauch Chunk,	„	Coal Mine,	
Beaver Meadow,	„	Parryville,	„	Coal Mine,	
Hazelton and Lehigh,	„	Hazelton Mine,	„	Beaver Mead. R.R.	
Nesquehoning,	„	Nesquehoning Mine,	„	Lehigh River,	
Lehigh and Susquehanna,	„	White Haven,	„	Wilkesbarre,	
Carbondale and Honesdale,	„	Carbondale,	„	Honesdale,	
Lykens Valley,	„	Broad Mountain,	„	Millersburg,	
Pine Grove,	„	Pine Grove,	„	Coal Mine,	
Philadelphia and Trenton,	„	Philadelphia,	„	Morrisville,	
Philadelphia, Ger., and Norrist'n,	„	Philadelphia,	„	Norristown,	
Germantown Branch,	„		„		
Philadelphia and Wilmington,	„	Philadelphia,	„	Wilmington,	
Delaware.—*Railroads*,—					
New Castle and Frenchtown,	„	New Castle,	„	Frenchtown, Md.	
Railroads from New Castle to Wilmington, and from Wilmington to Nanticoke Creek, are p					
Canal,—					
Chesapeake and Delaware,	*from*	Delaware City,	*to*	Back Creek,	
Maryland.—*Railroads*,—					
Baltimore and Ohio,	„	Baltimore,	„	Harper's Ferry,	
Washington Branch,	„	Patapsco River,	„	Washington,	
Baltimore and Port Deposit,	„	Baltimore,	„	Havre de Grace,	
Baltimore and Susquehanna,	„	Baltimore,	„	York, Pa.	
Reistertown Branch,	„	6 m. from Baltimore,	„	Reistertown,	

Name.						Length in Miles.
MARYLAND.—*Railroads*, (continued).—						
Wilmington and Susquehanna,	*from*	Havre de Grace,	*to*	Wilmington, Del.		32.00
Annapolis and Elkridge,	„	Washington Branch,	„	Annapolis,		19.75
Canal,—						
Chesapeake and Ohio,	„	Georgetown,	„	Hancock,		136.00
VIRGINIA.—*Railroads*,—						
Richm., Fredericksb., & Potomac,	„	Richmond,	„	Aquia Creek,		75.00
Louisa Branch,	„	24 m. from Richm'd,	„	Gordonsville,		49.00
Richmond and Petersburg,	„	Richmond,	„	Petersburg,		23.00
Petersburg and Roanoke,	„	Petersburg,	„	Weldon,		59.00
Greensville,	„	Near Hicksford,	„	Gaston, N. C.		18.00
City Point,	„	Petersburg,	„	City Point,		12.00
Chesterfield,	„	Coal Mines,	„	Richmond,		13.50
Portsmouth and Roanoke,	„	Portsmouth,	„	Weldon, N. C.		80.00
Winchester and Potomac,	„	Harper's Ferry,	„	Winchester,		32.00
Canals,—						
Alexandria Canal,	„	Georgetown,	„	Alexandria,		7.25
James River and Kanawha,	„	Richmond,	„	Buchannan,		175.00
Dismal Swamp,	„	Deep Creek,	„	Joyce's Creek,		23.00
Branches,	„		„			11.00
NORTH CAROLINA.—*Railroads*,—						
Wilmington and Raleigh,	„	Wilmington,	„	Weldon,		161.00
Raleigh and Gaston,	„	Raleigh,	„	Gaston,		85.00
Canals,—						
Weldon Canal,	„	Weldon,	„	Head Roanoke Falls,		12.00
Club Foot and Harlow,	„	Club Foot Creek,	„	Harlow Creek,		1.50
SOUTH CAROLINA.—*Railroads*,—						
South Carolina,	„	Charlestown,	„	Hamburg,		135.75
Columbia Branch,	„	Branchville,	„	Columbia,		66.00
Canals,—						
Santee,	„	Cooper River,	„	Santee River,		22.00
Winyaw,	„	Kinloch Creek,	„	Winyaw Bay,		7.40
Saluda,	„	Shoals,	„	Granby,		6.20
Drehr's,	„	Saluda Falls,	„	Head of Falls,		1.33
Lorick,	„	Broad River,	„	Head of Falls,		1.00
Lockharts,	„	Head Falls Br. River,	„	To Foot,		2.75
Wataree,	„	Jones's Mill,	„	Elliot's		4.00
Catawaba,	At various points on the Catawaba,					7.77
GEORGIA.—*Railroads*,—						
Georgia,	*from*	Augusta,	*to*	De Kalb County,		165.00
Athens Branch,	„	Georgia R. R.	„	Athens,		33.00
Western and Atlantic,	„	De Kalb County,	„	Tennessee River,		130.00
Central,	„	Savannah,	„	Macon,		193.00
Monroe,	„	Macon,	„	Forsyth,		25.00
Macon and Talbotton,	„	Macon,	„	Talbotton,		70.00
Canals,—						
Savan, Ogeechee, & Alatamaha,	„	Savannah,	„	Alatamaha River,		16.00
Brunswick,	„	Alatamaha,	„	Brunswick,		12.00
FLORIDA.—*Railroad*,—						
Wimico and St. Joseph,	„	Lake Wimico,	„	St. Joseph,		12.00
ALABAMA.—*Railroads*,—						
Alabama, Florida, and Georgia,	„	Pensacola,	„	Montgomery,		156.46
Montgomery and West Point,	„	Montgomery,	„	West Point,		87.00
Tuscumbia, Courtland, and Decatur,	„	Tuscumbia,	„	Decatur,		44.00
Selma and Cahawba,	„	Selma,	„	Cahawba,		10.00
Wetumpka,	„	Wetumpka,	„			10.00
Canals,—						
Muscle Shoals Canal,	„	Head of Falls,	„	Florence,		35.75
Huntsville,	„	Triana,	„	Huntsville,		16.00
MISSISSIPPI.—*Railroads*,—						
West Feliciana,	„	St. Francisville,	„	Woodville, Mp.		7.75
Vicksburg and Clinton,	„	Vicksburg,	„	Clinton,		54.00
Grand Gulf,	„	Grand Gulf,	„	Port Gibson,		7.25
Jackson and Brandon,	„	Jackson,	„	Brandon,		14.00
LOUISIANA.—*Railroads*,—						
Pontchartrain,	„	New Orleans,	„	Lake Pontchartrain,		4.50
West Feliciana,	„	St. Francisville,	„	Woodville, Mp.		20.00
Atchafalaya,	„	Point Coupee,	„	Opelousas,		30.00
Alexandria and Cheneyville,	„	Alexandria,	„	Cheneyville,		30.00
New Orleans and Carrolton,	„	New Orleans,	„	Lafayette,		11.25
Orleans Street,	„	New Orleans,	„	Bayou St. John,		1.50
Canals,—						
Orleans Bank,	„	New Orleans,	„	Lake Pontchartrain,		4.25
Canal Carondelet,	„	New Orleans,	„	Bayou St. John,		2.00
Barataria,	„	Near New Orleans,	„	Berwick's Bay,		85.00
Lake Veret,	„	Lake Veret,	„	La Fourche River,		8.00
TENNESSEE.—*Railroads*,—						
La Grange and Memphis,	„	La Grange,	„	Memphis,		50.00
Somerville Branch,	„	Moscow,	„	Somerville,		16.00
Highwassee,	„	Knoxville,	„	West. & Atlan. R. R.		98.50
KENTUCKY.—*Railroads*,—						
Lexington and Ohio,	„	Louisville,	„	Lexington,		92.75
Portage,	„	Bowling Green,	„	Barren River,		1.50
ILLINOIS.—*Railroads*,—						
Meredosia and Jacksonville,	„	Meredosia,	„	Jacksonville,		20.00

Name.					
ILLINOIS.—*Railroads*, (continued).—					
Coal Mine Bluffs,	*from*	Illinois,	to	Coal Mine,	
Canal,—					
Illinois and Michigan,	"	Chicago,	"	Near Peru,	
INDIANA.—*Canals*,—					
Wabash and Erie,	"	Lafayette,	"	Lake Erie,	
Whitewater,	"	Lawrenceburg,	"	Brookville,	
Railroad,—					
Madison and Indianapolis,	"	Madison,	"	Indianapolis,	
OHIO.—*Canals*,—					
Ohio and Erie,	"	Portsmouth,	"	Cleveland,	
Columbus Branch,	"	Columbus,	"	Canal,	
Lancaster Branch,	"	Lancaster,	"	Canal,	
Hocking,	"	Lancaster,	"	Athens,	
Zanesville Branch,	"	Zanesville,	"	Canal,	
Walhonding Branch,	"	Walhonding River,	"	Canal,	
Miami,	"	Cincinnati,	"	Defiance,	
Warren Branch,	"	Middletown,	"	Lebanon,	
Sandy and Beaver,	"	Bolivar,	"	Ohio River,	
Mahoning,	"	Akron,	"	Beaver River,	
Railroads,—					
Mad River and Sandusky City,	"	Tiffin,	"	Sandusky City,	
Ohio,	"	Manhattan,	"	Sandusky City,	
MICHIGAN.—*Railroads*,—					
Central,	"	Detroit,	"	Ann Arbor,	
Erie and Kalamazoo,	"	Toledo,	"	Adrian,	
Ypsilanti and Tecumseh,	"	Ypsilanti,	"	Tecumseh,	
Detroit and Pontiac,	"	Detroit,	"	Pontiac,	

AGGREGATE LENGTHS OF CANALS AND RAILROADS IN THE SEVERAL STA AS STATED BY MR. TANNER.

States.	*Canals.*	*Railroads.*	*States.*	*Canals.*	*Railroads.*
Maine,	50.50	10.00	Georgia,	28.00	616.00
N. Hampshire,	11.13	30.47	Alabama,	51.75	307.46
Vermont,	..	..	Mississippi,	..	83.00
Massachusetts,	79.50	407.31	Louisiana,	99.25	97.25
Rhode Island,	38.00	47.00	Arkansas,	..	..
Connecticut,	61.50	188.46	Tennessee,	..	164.50
New York,	931.25	677.11	Kentucky,	2.50	94.25
New Jersey,	170.75	215.30	Ohio,	777.00	70.00
Pennsylvania,	974.06	953.58	Michigan,	..	131.00
Delaware,	13.63	19.19	Indiana,	217.00	95.00
Maryland,	136.00	262.00	Illinois,	105.00	26.00
Virginia,	196.25	361.50	Missouri,	..	..
N. Carolina,	13 50	250.00	Florida,	..	12.00
S. Carolina,	52.45	201.75			

Aggregate length of Canals in the United States, as stated by Mr. Tanner, . . . 3
Aggregate length of Railroads in the United States, ... 3

Remark.—The above table of the Aggregate Lengths of Canals and Railroads in the several S is compiled from "A Description of Canals and Railroads of the United States, by H. S. Ta New York, 1840;" but it will be perceived, that there is a difference, in many instances, betwe aggregate lengths here stated, and the sum of the lengths of the canals and railroads in the s States, as given in the preceding "Condensed Summary."

A number of the canals and railroads enumerated in the "Condensed Summary" are not yet pleted; and some which are not mentioned, are in progress.

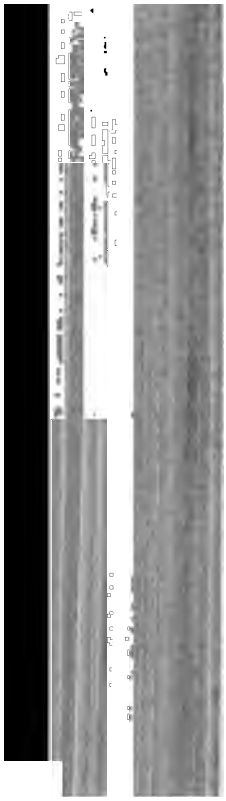
DIVISIONS.—The Union consists at present of 26 States, three Territories, one Federal District. The States and Territories are subdivided into counties townships; but these are too numerous for us to specify them, nor is it very n sary; for when they are mentioned, it is always with the name of the State or t tory attached, so that there can be no difficulty in ascertaining their situation. original thirteen States which joined in the Declaration of Independence in 1776 distinguished by asterisks.

Names.	*Abbreviations.*	*Area in Square Miles.*	*Population in 1830.*	*Slaves in 1830.*	*Seats of Government, with their distances from Washington.*	
Dist. of Columbia,	D. C.	100	39,834	6,119	WASHINGTON.	
Maine,	Maine.	35,000	399,955	..	Augusta,	595 N.E.
*New Hampshire,	N. H.	9,490	269,328	..	Concord,	474 N.E.
Vermont,	Vt.	10,000	280,652	..	Montpelier,	524 N.N.E.
*Massachusetts,	Mass.	7,800	610,408	..	Boston,	432 N.E.
*Rhode Island,	R. I.	1,225	97,199	17	Providence and Newport,	394 & 403 N.E.
*Connecticut,	Ct.	4,764	297,665	25	Hartford and Newhaven,	335 & 301 N.E.
*New York,	N. Y.	48,000	1,918,608	75	Albany,	376 N.N.E.
*New Jersey,	N. J.	7,276	320,823	2,254	Trenton,	166 N.E.
*Pennsylvania,	Pa.	46,000	1,348,233	403	Harrisburg,	110 N.
*Delaware,	Del.	2,100	76,784	3,292	Dover,	114 E. by N.
*Maryland,	Md.	13,500	447,040	102,294	Annapolis,	37 E.
*Virginia,	Va.	70,000	1,211,405	469,757	Richmond,	122 S. by W.
*North Carolina,	N. C.	50,000	737,987	245,601	Raleigh,	286 S.S.W.
*South Carolina,	S. C.	33,000	581,485	315,401	Columbia,	500 S.S.W.
*Georgia,	Ga.	62,000	516,823	217,531	Millidgeville,	642 S.S.W.
Alabama,	Ala.	50,000	309,527	117,549	Tuscaloosa,	858 S.W. by W.
Mississippi,	Mp.	46,500	136,621	65,659	Jackson,	1035 S.W. by W.
Louisiana,	La.	48,500	215,739	109,588	New Orleans,	1203 S.W.
Tennessee,	Ten.	45,000	681,904	141,603	Nashville,	714 W.S.W.
Kentucky,	Ken.	40,500	687,917	165,213	Frankfort,	551 W. by S.
Ohio,	Ohio.	45,000	937,903	..	Columbus,	396 W. by N.
Indiana,	In.	36,000	343,031	..	Indianapolis,	573 W. by N.
Illinois,	Ill.	54,000	157,455	747	Springfield,	801 W. by N.
Michigan,	Mich.	58,000	31,639	32	Detroit,	526 N.W.
Missouri,	Mo.	68,000	140,445	25,081	Jefferson city,	980 W.
Arkansas,	Ark.	54,000	30,388	4,576	Little Rock,	1068 W.S.W.
Florida Territory,	Fl.	55,000	34,730	15,501	Tallahasse,	896 S.W. by S.
Wisconsin Ter.	Wisc.	270,000	....	..	Madison,	872 W.N.W.
Iowa Territory,	Iowa.		....	..	Burlington,	956 W.N.W.
			12,866,920	2,009,031		

The States of Maine, New Hampshire, Vermont, Massachusetts, Rhode-Island, and Connecticut, forming the north-eastern part of the territory, bear collectively the name of *New England*; and their inhabitants are distinguished from other Americans by the name of *Yankees*, which is said to be an Indian corruption of *English*. They are also sometimes called the Eastern States. New York, New Jersey, Pennsylvania, Delaware, and Maryland, are called the Middle States; Virginia, the Carolinas, Georgia, and Alabama, are called the Southern States, or the South. Louisiana, Mississippi, Tennessee, Arkansas, Missouri, Kentucky, Illinois, Indiana, Ohio, Wisconsin, and Iowa, are all situate in the great Western or Mississippi valley. Michigan consists of the peninsula between lakes Huron and Michigan, and includes also the whole of the west shore of Lake Michigan and the eastern part of the peninsula between that lake and Lake Superior. Florida forms a long peninsula, projecting southward between the Gulf of Mexico and the Atlantic Ocean; the interior consists of swamps, which render a passage across it not every where nor always practicable. The district of Columbia is a small area, ten miles square, situate on both sides of the river Potomac, which was ceded by the States of Virginia and Maryland to the United States for the site of the federal capital.

§ *Cities and Towns, &c.*

DISTRICT OF COLUMBIA.—WASHINGTON, the capital of the United States of North America, is finely situate on undulating ground, in the angle formed by the junction of the navigable river Potomac with the Eastern branch, in 38° 53′ N. lat., and 77° 1′ W. long., about 80 miles from Chesapeake Bay. The plan of the city, as originally laid out, forms nearly a parallelogram of about four miles by two and a half, consisting of streets crossing each other at right angles in the direction of the cardinal points, and transversed obliquely by larger avenues, named after the several States of the Union; but only a small portion of the plan has yet been executed, and the city consists of straggling clusters of houses placed at inconvenient distances. Almost the only part that is compactly built is that which extends for about a mile along Pennsylvania avenue, between the President's house and the Capitol, both of which are handsome buildings of white free-stone. The Capitol contains the halls of the Senate and House of Representatives, the Library of Congress, and numerous other apartments, some of which are spacious and tastefully embellished. It is a large building, surmounted in the centre by a massy dome; its eastern front is adorned with a Corinthian colonnade, and surrounded by grounds tastefully planted and laid out. There are various other public buildings, of neat and substantial, but unpretending architecture, as the City Hall, the Halls of Columbian College, the Penitentiary, 20 churches, the Medical Hall, &c. About a mile S.E. of the Capitol is the Navy yard, on Eastern branch, which is of sufficient depth along shore for the largest vessels, and immediately above it is the Naval Hospital. At the junction of the two rivers stands the United States Arsenal. The principal educational establishment is Columbian College, founded by the Baptists, with nine instructors, besides four professors connected with the medical department. The city was founded in 1791, and became the seat of government in 1800; in 1830 the population amounted to 18,827, including 3129 free blacks, and 2319 slaves; but during the Sessions of Congress it is crowded with strangers. Notwithstanding its advantageous situation on a large navigable river, and in the centre of a productive country, Washington has never become the seat of trade; and its growth is to be attributed solely to the expenditure of government and the public functionaries. It has a bridge one mile in length over the Potomac, leading to Alexandria; and two bridges across Eastern Branch. The Baltimore railroad affords an easy communication with the north; the Chesapeake and Ohio canals connect it with the west; and the Potomac to different points, on which regular lines of steam-packets run, with the south. *Alexandria* stands on the Virginian side of the Potomac, about six miles below Washington,



NEW HAMPSHIRE.—Concord, the capital, is a small town on the ri
been rendered navigable by several small canals round its falls. *Portsmou*
catsqua river, which forms one of the finest harbours in the world, is a n
inhabitants, who carry on the coasting trade and fishery with some acti
branches of manufacture. It contains one of the navy yards of the Unite
largest town, is 10 miles W. of Portsmouth, and contains about 6000 inhab

VERMONT.—Montpelier, the capital, is a small town, in a wild and an
the eastern and western chains of mountains, but occupies a beautiful situ
which runs to Lake Champlain. The other principal towns are, *Burlington*
bitants, on the east side of Lake Champlain; *St. Albans*, *Swanton*, *Vergen*
Champlain; *Middlebury*, the seat of a college; *Pittsford*, *Rutland*, *Manches*
Brattleboro, which contains the Vermont asylum for the insane; *Rocking*
Norwich, the seat of a university, and *Danville*.

MASSACHUSETTS.—Boston, the capital, is pleasantly situate on
the west side of Massachusetts Bay, at the mouth of Charles river, with
harbour, possessing sufficient depth for the largest vessels, and perfectly se
also extended into South Boston on the mainland, and to East Boston on a
the north is *Charlestown*, also on a peninsula, and *Chelsea*; and to the wes
These may be all considered as one large town connected partly by bridges, a
stations, and containing altogether above 100,000 inhabitants, of whom 80,32
tion of the city in 1837. As a commercial town Boston is second only to New Y
ing to the port at the end of 1836, amounted to 226,042 tons; the value of
countries, to £3,200,000; and of exports, to £2,000,000. Boston is also distinguished for
the literary character of many of its citizens. Charlestown contains a Unit
Bunker's Hill, so celebrated for the battle fought there 17th June 1775. The
by a granite obelisk, intended to be 220 feet high, but not yet finished, which
hill. *Cambridge* is the seat of Harvard university, which is about four miles f
a permanent fund of £120,000 in property, and an yearly income of £4400, be
farther is the cemetery of Mount Auburn, in a very beautiful and pictures
miles N.E. of Boston, a considerable town, with 15,000 inhabitants, who
guished for their commercial enterprise, frugality, and industry. *Newburyp*
neatly built town at the mouth of the Merrimack, carries on a considerabl
cod, mackerel, and whale-fisheries. Population in 1837, 6741. *Lowell*, at the
mack and Concord rivers, 20 miles N.W. of Boston, with which it is conn
canal, is one of the principal manufacturing towns of the United States.
only about 100 inhabitants; in 1837, the population amounted to 18,010; and
24 cotton-mills, with 135,000 spindles and 5000 looms, besides woollen and ot
tucket, a sandy island, on the south coast, contains a population of 9000 inhabita
for their enterprise in the whale-fishery, and other maritime occupations. Fo
the dangerous shoals and breakers called the *Nantucket Shoals*. *Fall River*,
river, 45 miles S. of Boston, contains 6352 inhabitants who are largely engag
ture; and farther up the river, at the head of sloop navigation, is *Taunton*, al
with 7647 inhabitants. *Plymouth*, on the coast, 36 miles S.E. of Boston, a sma
tants, is memorable as the spot where the exiled Independents of Yorksh
pilgrim fathers," founded the first settlement in New England, 11th Decem
rapidly increasing town, with a population exceeding 7000, on the railroad.
Springfield, a thriving manufacturing town, on the Connecticut, with about
other principal towns are, *Adams*, *Williamston*, *Northampton*, *Deerfield*, an
the Connecticut; *Province-town*, at the extremity of Cape Cod; *New Bedf*
the whale-fishery, on the Acushnet, an inlet of Buzzard's Bay; *Barnstable*
stable county, the south-east part of the State; *Edgarton*, the chief town,
and capacious harbour in the island called *Martha's Vineyard*, off the south

town with 11,534 inhabitants, who are extensively engaged in several branches of manufacture and trade. It contains also the buildings of Yale College, one of the oldest and most extensively useful of the schools of the United States. The other principal places are, *Saybrook*, at the mouth of the Connecticut; *New London*, at the mouth of the Thames; *Bridgeport*, to the west of the mouth of the Housatonic river; *Birmingham*, and *Waterbury*, on the Naugatuck, and *Meriden* on the Quinipiak, which are seats of extensive manufactures, chiefly of iron, brass, tin, and copper.

NEW YORK.—The city of *New York* is the largest, most wealthy, and most flourishing in America. It occupies the southern part of Manhattan, a narrow island, 14 miles long, formed by the Hudson and the East river, and extends three miles along the bank of the former, and four along the bank of the latter river. Below the city, Long Island, Staten Island, and the mainland of New Jersey, form a land-locked bay or harbour, of easy access, sheltered from storms, deep enough for the largest ships, and sufficiently large to contain all the navies in the world. No city possesses greater advantages for foreign commerce and inland trade; two long lines of canals have increased its natural advantages, and, connecting it with the remotest west, have rendered it the great mart of a vast region, now occupied by industrious millions, while its facilities of communication with all parts of the world have made it the great thoroughfare of the continent. Its progress in population, trade, and wealth, has probably never been paralleled. In 1650, it contained only about 800 inhabitants; in 1700, 6000; in 1756, 10,381; in 1790, 33,131; in 1800, 60,489; in 1810, 96,373; in 1820, 123,706; in 1830, 202,589; in 1835, 270,089. The greater part of the city consists of streets running in straight lines, but not always parallel or crossing each other at right angles. They are well paved and well lighted, and most of the buildings are of brick, marble, or granite, although there are still many of wood. *Broadway*, the principal street, is a long and spacious avenue, three miles in length and 80 feet wide, bordered by commodious and elegant houses, and containing long rows of rich and showy shops. Here is a continual stream of carriages, waggons, drays, omnibuses, and all other sorts of vehicles destined for business or pleasure, and crowds of pedestrians sauntering or hurrying along. The southern point of the island, on both sides of Broadway, is the principal seat of business, and the banks of both rivers are lined with forests of masts, bearing the flags of all countries. *Wall* street, occupied by bankers and brokers, is the centre of money transactions. At present the inhabitants are imperfectly supplied with water by wells, cisterns, and some small aqueducts; but measures are in progress for bringing into the city, by an aqueduct 41 miles in length, such a quantity of water as will afford a daily supply of thirty millions of gallons. This great work will cost £1,000,000 sterling. Among the public buildings may be mentioned, the City Hall, a handsome edifice, in the Park, near the southern part of the city; the Hall of the university, in Washington square; the New York Hospital; the Custom-house; the merchants' exchange, in Wall Street; the halls of justice, or collect prison, a massive building in the Egyptian style; Astor house, in Broadway, a hotel, built of granite, containing 390 rooms, and furnishing 600 beds; the alms houses at Bellevue, on East river; and 160 churches, &c. The churches are more distinguished for their accommodation and comfort than for size and splendour; nor are the other public buildings either so numerous or so striking as in the cities of Europe. Of places of public amusement there is a great number, including six theatres, which are well filled every night. The civil or municipal government is vested in a mayor, aldermen, and common council, elected annually by universal suffrage and the ballot; whose jurisdiction extends over the city and the surrounding waters. The offices are not largely paid, nor accompanied by much patronage; and the occupants of civic offices are seldom considered as thereby invested with much additional dignity. But it is chiefly as the great mart of foreign commerce and inland trade that New York is distinguished. In 1786 the whole shipping of the port did not exceed 120 in number, with a tonnage of 18,000. In 1836, it consisted of 2293 vessels, of which there were 599 ships, 197 barques, 1073 brigs and galleys, 412 schooners, and 4 sloops; with a burden of 350,000 tons. In 1791, the whole amount of the exports was £501,093; in 1816, only twenty-five years later, the mere duties on merchandise imported at New York alone, amounted to £3,200,000; and in 1836, the value of the exports amounted to £25,732,600; and of imports, to £37,996,007; but these were much above the ordinary amount, the importations of that year being excessively great. The inland and coasting trade is immense; but of its actual extent and value there is no account. Near the northern end of Manhattan is the village of *Harlaem*, connected with the city by a railroad, six miles in length; and on Long Island, opposite New York, stands the city of *Brooklyn*, with a population of 30,000; to the north-east of Brooklyn is *Williamsburg*, another suburb of the great emporium; and on Wallabout bay, lying between these, is the United States' navy yard. Nine steam-boats at four ferries keep up a constant communication with New York, and a railroad runs eastward through Long Island to Hicksville, a distance of 27 miles.

Albany, the capital of the State, is pleasantly situate on an eminence on the western bank of the Hudson, 144 miles above New York. Its wealth and trade have been greatly increased by the opening of the Erie and Champlain canals, which terminate in a large basin within the city; and its situation renders it the great thoroughfare for travellers on the northern and western routes. The Hudson and Mohawk railroad, which is a prolongation of the Saratoga and Utica railroads, also terminates here. The number of travellers who pass through the city yearly exceeds 600,000; the total number of boats which arrived at and departed from Albany, in 1836, was 10,226; to which must be added about 400 coasting vessels. Several iron works, breweries, tanneries, and other manufactories, add to the wealth of this thriving city. Population in 1835, 28,109. *Hudson*, on the left bank of the river at the head of ship navigation, 117 miles from the sea, is a prettily situate, and well-built town, with an extensive and increasing trade, and a population, in 1835, of 5531. To the north-west is the village of *New Lebanon*, a favourite watering-place, in a delightful situation; with warm springs, and in the vicinity of the springs is a society of Shakers, consisting of about 600 members. *Catskill*, below Hudson, on the opposite bank, is a large village with 5000 inhabitants. At *Sing-Sing*, on the left bank of the Hudson, 35 miles above New York, is the state prison for criminals, and at *West Point*, 12 miles further north, but on the right bank, is the academy where the officers of the United States' army are educated. *Newburgh* and *Pooghkeepsie*, farther up the river, the former on the right, and the latter on the left bank, are two of the most flourishing towns in America. They contain each a population of 10,000, which is rapidly increasing. *Troy*, on the east bank of the Hudson, six miles above Albany, a well-built town with regular and spacious streets, on the alluvial flat of the river, has become the seat of an active trade: and there are numerous manufactories and cotton-mills in the neighbourhood. Population in 1835, 16,959, besides 3300 in the village of West Troy, on the opposite bank of the river. Troy is situate at the head of the tide and sloop navigation, and is connected by canals with the lakes to the north and west. *Lansinburg*, above Troy, with 3000 inhabitants, is a busy place, largely engaged in the river trade, and contains a great number of manufactories and workshops. N.W. of Troy, 20 and 24 miles, are *Ballston Spa* and *Saratoga Springs*, two celebrated watering places, much frequented in summer; and to the north of these are two places celebrated in the wars of last century, *Ticonderoga*, at the outlet of Lake George, and *Crown Point* on Lake Champlain. *Plattsburg*, a flourishing village, also on Lake Champlain, acquired some notoriety during last war for the capture of a British flotilla and the defeat of a land force. These places are situate in Essex and Clinton counties, which contain 222 saw-mills, and 51 iron-works, besides tanneries, pot and pearl asheries, cotton-factories, &c. *Ogdensburg*, on the St. Lawrence, at the mouth of the Oswegatchie, and opposite

to Prescott in Upper Canada, is advantageously situate at the lowest point to which lake steamers navigate the river. It is a port of entry, and has a population of 2000. *Sackett's Harbour*, at the east end of Lake Ontario, is spacious and safe, with depth of water sufficient for the largest ships close along the shore. It was the naval station during last war, and has barracks for the accommodation of 2000 troops. It is a port of entry; has considerable trade, and about 1800 inhabitants. Ten miles from the lake or Black river, which falls into Sackett's harbour, is *Watertown*, a large and rapidly increasing village, with 3500 inhabitants, most advantageously situate for mills, the river having a fall of 90 feet within the space of a mile. *Schenectady* is a flourishing town on the banks of the Mohawk, intersected by the Erie canal, and by railroads from Albany to Saratoga and Utica, and increased its population from 4268, in 1830, to 6272 in 1835. *Little Falls*, on the Mohawk river, is most advantageously situate for the employment of machinery, and has a population of 2000. *Utica*, on the southern branch of the Mohawk, at the junction of the Chenango and Erie canals, is a rapidly increasing town, having doubled its population in the ten years preceding 1835, when it amounted to 10,183. About 15 miles N.N.E. of Utica are *Trenton Falls*, on the West Canada creek, an affluent of the Mohawk, which are much visited on account of their picturesque scenery. *Rome*, at the junction of the Erie canal with the Mohawk, has already about 2000 inhabitants, and has the prospect of becoming a place of considerable importance. *Oswego*, one of the most flourishing towns in the State is situate on Lake Ontario, at the head of the Onondaga or Oswego river. It is the chief commercial port on the lake, and its trade has been vastly increased since the opening of the Welland canal, which has made it the centre of much of the trade of the upper lakes. Population in 1835, 5000. *Salina*, a village in Onondaga county, 30 miles S. by W. of Oswego, contains a great salt-spring, from which large quantities of salt are made. Salina contains 2500 inhabitants, 77 salt-works, with 1968 kettles and pans. *Syracuse*, a mile distant, is increasing so rapidly that the two villages will probably soon become united into one large town. *Seneca Falls*, at the outlet of Lake Seneca, is one of the most prosperous villages in the State, having increased its population in the ten years preceding 1835 from 253 to 3500. It owes its rapid growth to the water-power furnished by the river, which is estimated to be sufficient for 200,000 spindles. *Waterloo*, several miles further up the river, participates in the advantages, and rivals the growth of Seneca Falls; it contains a population of 2000, with a great number of flour, saw, and other mills, and is noted for its wooden-ware. *Geneva*, an old town in this region of new cities, is the seat of a college, and contains 3000 inhabitants. It occupies a beautiful site, at the north end of Seneca lake. *Canandaigua*, at the north end of a fine lake of the same name, rivals Geneva in the beauty of its situation, and the elegance of its houses, is a more busy town, and contains 2000 inhabitants. *Penn-yan*, on the Crooked lake canal, a thriving manufacturing village, with 1500 inhabitants, derives its singular name from the circumstance of its having been founded by about an equal number of Pennsylvanians and Yankees. *Rochester*, on the Genesee and the Erie Canal, a most rapidly increasing town, whose population increased from 1500, in 1820, to 17,160, in 1837. It is well built, with spacious streets, and carries on a great trade in wheat and flour, as well by the canals as by the lakes, the steamers of which ascend the river to its port of *Carthage*. Its carpet manufacture has attained high excellence. Other branches of the woollen trade, and various other manufactures are also very flourishing. *Lockport*, a flourishing town, situate at the place where the Erie canal rises from the Rochester level to that of Lake Erie, by means of five double locks, was founded in 1821, and in 1837 contained about 5000 inhabitants. *Buffalo*, the great emporium of the lakes, is situate at the point where the Erie canal joins the lake of that name, at the head of the Niagara river; and increased its population from 2095, in 1820, to 20,000 in 1837. It is a well built town, with spacious streets, and neat and commodious buildings. A railroad extends from Buffalo to the Falls of Niagara; and another, 3 miles in length, connects it with the flourishing village of *Black Rocks*, which has 2000 inhabitants, at the entrance of the canal. *Schlosser*, a small place with a harbour, formed at the mouth of Gill Creek on the Niagara river, just above the falls, opposite the Canadian village of Chippeway. *Auburn*, a village at the outlet of Lake Owasco, contains the western penitentiary of the State, which has 600 cells, and spacious work-shops. The establishment is managed on the principle of solitary confinement by night; but the prisoners work and eat together during the day. One of the most remarkable objects in the State of New York is the *Erie canal*, which extends from the Hudson at Albany, to Lake Erie at Buffalo, a distance of 363 miles, which was commenced in 1817, and completed in 1825, at the expense of about £2,200,000 sterling. The trade on the canal is already very great, and is every year increasing, so much so, that by a recent act of the legislature, its breadth is to be increased from 40 feet to 70, and its depth from 4 to 6, with a double set of locks, at an expense of £2,000,000 more. The State of New York also includes Long-Island, which extends 120 miles eastward from the city, being 20 miles broad, and is traversed by a range of low hills.

NEW JERSEY.—*Trenton*, the capital, at the lower falls of the Delaware, is a small town, with only 3925 inhabitants. *Princeton*, 10 miles N.E. of Trenton, is noted in the history of the revolutionary war, and contains the halls of New Jersey College, and a Presbyterian theological seminary. *Newark*, the largest and most important town in the State, stands on the river Passaic, 3 miles from Newark Bay, and 10 miles west of New York. It contains numerous manufactures of various kinds, and 20,000 inhabitants. *Paterson*, one of the most important towns in the United States, stands on the Passaic at its lower falls, and contains numerous manufactures, for which it possesses water power equal to 1750 horses. Its population increased from 7731 in 1830, to above 12,000 in 1836. Paterson communicates with the Hudson by a railroad. *Jersey City*, formerly *Paulus Hook*, stands on Berren Peninsula, opposite to New York, on the right bank of the Hudson, where the river is a mile wide, and at the eastern termination of the Morris Canal, and the Paterson and New Jersey railroads. It is a rapidly improving town. A few miles up the river is the village of *Hoboken*, a famous summer resort, and the battle field of the New York duellists. The other principal places are: *Elizabethtown*, four miles from Newark Bay; *Bridgetown*, a little further south; *Perth Amboy* and *South Amboy*, at the mouth of the Raritan river, to the south-west of Staten Island; *New Brunswick*, at the head of sloop navigation on the Raritan, and at the termination of the Delaware and Raritan Canal, with 6000 inhabitants. *Morristown*, where Washington fixed his head-quarters in the winter of 1779; *Bordentown*, on the Delaware, below Trenton; *Burlington*, further down the river, and *Camden*, a busy thriving place opposite to Philadelphia.

PENNSYLVANIA.—*Philadelphia* is situate on a plain, between the rivers Delaware and Schuylkill, extending about five miles N.-S. along the former, and two miles E.-W., being built on a very regular plan, with spacious streets crossing each other at right angles, which are lined with good houses, mostly built of red brick, and planted with rows of trees. Though 100 miles from the sea, it has not only all the advantages of a maritime station, but also those of a double port; for the Schuylkill is accessible to vessels of 300 tons, while the Delaware which is here one mile wide, admits the largest merchant vessels to the doors of the warehouses, and is at once spacious and secure. The population, in 1830, amounted to 167,836; it now exceeds 200,000. The manufactures are various and extensive, and the foreign commerce is considerable, though inferior to that of New York; but the inland and coasting trade is extensive and is rapidly increasing. The city is noted for the number and excellence of its benevolent and literary institutions; and among its public buildings may be mentioned, the Old State House, in which the declaration of independence was signed in 1776; the United States Bank; the Pennsylvania Bank; the United States Mint; and Girard College, a magnificent building erecting according

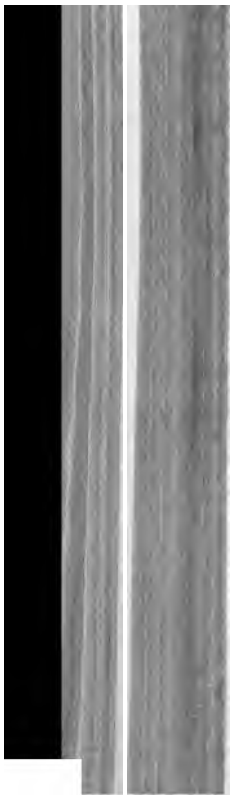
to the bequest of M. Girard, a banker in the city, who left his fortune of £1,500,000 for the purpose of educating orphan children. Philadelphia was founded by William Penn in 1682, who gave it its present Quaker-like name, which means brotherly love.

Harrisburg, the capital of the State, is situate on the left bank of the Susquehanna; but is a small town, with less than 5000 inhabitants. *Pittsburg* is situate on a low alluvial point at the junction of the Alleghany and Monongahela rivers, extending about a mile and a half along the former, and one mile along the latter. Perhaps the site is unrivalled in the world; commanding a river navigation of about 20,000 miles, which gives it access to the most extensive fertile region on the globe, as well as to the sea; surrounded by inexhaustible beds of the most useful minerals; connected by canals and railroads with the principal commercial marts of the Atlantic coast, and by others with the great lakes. The population in 1800 was only about 1600; in 1837, including that of its suburbs of Alleghany, Lawrenceville, and Birmingham, 36,000. This astonishing increase is owing to the rapid growth of the manufacturing establishments. In 1833 there were 90 steam-engines at work, and in 1836, there were 125; 10 rolling-mills, 19 iron-foundries, machine-shops, and steam-engine factories, 10 glass-works, 8 cotton-factories, besides numerous other establishments, as breweries, tanneries, brass-foundries, smitheries, saw-mills, oil-mills, grist-mills. The value of their annual produce is estimated at £2,500,000; about 250,000 chaldrons of coal are annually raised in the neighbourhood; the trade is extensive; and the amount of the mercantile transactions, in 1837, was estimated at £3,775,000. The city is regularly built, but the clouds of smoke, in which it is constantly enveloped, give it rather a dingy appearance. The suburb of Lawrenceville contains the Alleghany arsenal of the United States. The other principal places are: *Reading*, on the Schuylkill, with 8000 inhabitants; *Chester*, on the Delaware below Philadelphia, 1000; *West-Chester*, in the fine valley of the Brandywine, 1500; *Lancaster*, 64 miles west of Philadelphia, 7704 inhabitants, chiefly Germans, or of German descent; *Easton*, on the Delaware, 5000; *Hamburg*, on the Schuylkill 3500,; *Carlisle*, on the Conedogwinit, 3707; *Pottsville*, on the Schuylkill, whose population had increased from 300 in 1825 to 3300 in 1835; *Wilkesbarre*, on the Susquehanna, in the vale of *Wyoming*, 3000; *Erie*, a small but thriving town, with one of the best harbours on the lake of the same name, at the termination of a railway which connects it with the Alleghany.

DELAWARE.— *Dover*, the capital, is a small town with 1500 inhabitants, near the centre of the State, 7 miles west from the shore of the Delaware. *Wilmington*, the principal and only considerable town, stands on a narrow neck of land between the Christina Creek and the Brandywine, just above their confluence, a few miles from the Delaware. It is a busy and prosperous place, with upwards of 10,000 inhabitants. There are about 100 mills and factories in the immediate neighbourhood, which produce flour, paper, gunpowder, ironware, cotton, and woollen goods, and the city is itself the seat of some branches of mechanical industry. *Newcastle*, an old town, with a harbour on the Delaware, at the termination of a railway which leads to Elk river, on the Chesapeake. *Port Penn*, opposite Reedy Island on the Delaware, is a convenient shelter for vessels when the river is obstructed with ice.

MARYLAND.—*Annapolis*, the capital, is a small scattered town, of about 2500 inhabitants, on the west bank of the Severn river, near the Chesapeake. *Baltimore*, a large and flourishing commercial city, on the Patapsco river, an arm of the Chesapeake, 37 miles N.E. of Washington, and 200 miles from the sea by the ship channel. It has a capacious harbour, where 2000 vessels may lie in safety, and an inner basin, where vessels drawing 10 or 12 feet may approach the quays. Baltimore is a well built town, with broad, straight, and regular streets, and in 1830 contained 80,625 inhabitants. It formerly possessed a great foreign trade, which has now been considerably diverted to New York and Philadelphia; but the coasting trade has been much extended. The shipping belonging to the port in 1836, amounted to 62,365 tons, one-half of which was engaged in the coasting trade. The manufacturing industry of Baltimore has, of late years, received a great impetus, and has now become important for its extent; within 10 miles of the city there are about 70 manufacturing establishments; and the Baltimore shipbuilders are famed for the construction of fast-sailing vessels, which are in demand in foreign ports. The city is well supplied with water, and, though formerly considered unhealthy, and repeatedly suffering from the ravages of the yellow fever, is now one of the healthiest cities in the Union, owing probably to the draining of the marshes and the paving of the streets. *Frederick*, a flourishing town, with 7000 or 8000 inhabitants, on a branch of the Baltimore and Ohio railway. *Cumberland*, in the western part of the State on the Potomac, at the eastern terminus of the great national road, has lately become important from its valuable coal seams, which are rendered accessible by the Chesapeake and Ohio Canal.

VIRGINIA.— *Richmond*, the capital, is pleasantly situate on the left bank of the James river, below its lower falls, about 100 miles south of Washington. Including Manchester on the opposite side of the river, and connected with it by a bridge; the population exceeds 20,000. The Capitol, or State-house, though occupying a commanding situation, is only a large brick building, on the model of the Maison Carrée of Nismes. Richmond is 110 miles from the mouth of the river, which has 14 feet of water up to Warwick, 5 miles below the city, and is navigable for boats 220 miles above the falls. This advantageous position enables it to carry on an extensive trade; and the annual value of its exports is estimated at £600,000. *Petersburg*, now a thriving manufacturing town, on the Appomatox river, with 8330 inhabitants in 1830, is connected by a railroad with Richmond on the north, and the Roanoke on the south. *City-point*, a mere hamlet at the confluence of the Appomatox with the James, has a deep and spacious harbour, where wharfs have been built for loading such large vessels as cannot go up to Richmond or Petersburg. *Norfolk*, on Elizabeth river, 8 miles from Hampton roads, near the entrance of the Chesapeake, is a considerable town with about 12,000 inhabitants, including those of the suburbs of Portsmouth and Gosport, which contain one of the principal naval stations and depots of the United States. *Hampton roads*, below Norfolk, and within the mouth of James river, are protected by *Fort Monroe*, on Old Point, a formidable fortress, designed to mount 412 cannon; and on the opposite point, named the Rip-raps, and 1900 yards distant, is *Fort Calhoun*, which is capable of mounting 232 guns. To the south of Norfolk is the *Dismal Swamp*, containing about 150,000 acres, in some places covered with a dense growth of large trees, cedars, cypresses, or pines, and in others bearing only tall reeds and grasses. The soil is in some places a soft trembling bog, in others firm, but covered knee deep with water; and in the centre is Lake Drummond, about 20 miles in circumference, with a depth of 12 or 15 feet. It is now crossed by a canal which carries its timber to Norfolk. *York town*, at the mouth of York river, near the Chesapeake, is celebrated in the history of the revolutionary war, for the surrender of Lord Cornwallis and his army, which took place here in October 1781. *Williamsburg*, once the capital of the province, is now a decayed town, about midway between the York and the James. *Mount Vernon*, on a high bank of the Potomac, 7 miles below Alexandria, once the seat of Washington, now contains his tomb, which is merely a brick vault in the garden. *Fredericksburg*, a thriving town, at the head of the navigation on the Rappahannock. *Monticello*, 64 miles W.N.W. of Richmond, formerly the seat of President Jefferson, contains his tomb, which is marked with a simple granite obelisk. *Charlottesville*, the seat of the University of Virginia, near Monticello, is a small town with less than 1000 inhabitants, of whom one-half are blacks. *Lynchburg*, one of the greatest tobacco markets in the country, is situate on the James, and in 1830 contained 4630 inhabitants. In *Rockbridge* county



nually about 3,000,000 bushels of salt.

NORTH CAROLINA.—Raleigh, the capital, is a thriving town
nected by a railway with Richmond in Virginia. *Wilmington*, 26 miles
river, is a thriving commercial town, with 4000 inhabitants. *Fayetteville*
gation, on the same river, is a busy and flourishing town, with 3000 in
right bank of the Neuse, 80 miles from Pamlico Sound, is a well bu
trade, and 3762 inhabitants in 1830. *Beaufort*, on Newport river, a few
best harbour in the State, a little to the west of Cape Lookout, from whi
10 miles into the sea.

SOUTH CAROLINA.—Charleston stands on a point of land at the
Cooper rivers, six miles from the sea. The site is almost a dead level, c
high water-mark, and is subject to inundation when the sea is driven in
built on a regular plan, and contained in 1830, 30,289 inhabitants. The
and the bar forms an almost continuous line of breakers extending abou
Moutinerille, on Sullivan's Island, is a pleasant little town, much resorted
when the refreshing sea breezes restore health and vigour to the system
some air of the swamps. *Georgetown*, on Winyaw Bay, a place of some
is situate among swamps, and very unhealthy. *Columbia*, the capital o
Congaree river, is only a small town, with 4000 inhabitants. *Hamburg*, o
Augusta, in Georgia, is the most flourishing town in the State. The fi
1821, and, at the end of six years, the population exceeded 1000, and i
number. It stands at the head of steam navigation on the river, and is
by a railroad. *Spartanburg*, a pleasant village, with 1000 inhabitants, 185 m
ton. To the north of it is *Cowpens*, the scene of an engagement in the re

GEORGIA.—Milledgeville, the capital, is a small town, on the Oconee r
Savannah, a flourishing commercial town, containing, in 1835, 11,000 inha
bank of Savannah river, 15 miles from the sea, but is accessible to large v
the Savannah, at the head of steam-boat navigation, 240 miles above the
well built and thriving commercial town, with about 8000 inhabitants.
contained in 1823 only a single cabin; in 1836 the population had increa
pot of a populous and fertile country, and has an extensive trade. *Colum*
river, 430 miles from the Gulf of Mexico, by the windings of the stream, w
in 1836 had already acquired a population of 4000 souls. Steamers run reg
carry thither the produce of this inland region.

ALABAMA.—Tuscaloosa, the capital, is a small but thriving town, with
centre of the state. *Mobile*, at the mouth of the great river of Alabama, ha
tensive trade; about 250,000 bales of cotton are annually shipped from its w
which in 1830 was only 3194, had increased in 1836 to nearly 10,000. *St. Step*
a flourishing town with 12,000 inhabitants. *Montgomery*, near the head of
ous town with 2000 inhabitants. *Wetumpka*, five miles above the junct
Tallapoosa, stands at the head of steam navigation on the former; it was l
contained 3000 inhabitants, having become the depot of a highly fertile
head of steam navigation on the river Tennessee, below the muscle shoal
2000 inhabitants. *Waterloo*, lower down, is at the head of navigation durin
when steam-boats cannot pass Colbert's shoals. Above the Muscle shoals
the river, with which it is connected by a canal, is *Huntsville*, the princip
thern Alabama. It is surrounded by a fertile, populous, and well-cultivat
2500 inhabitants.

MISSISSIPPI.—Jackson, the capital, is a small town newly laid out, w
[illegible] and about 1000 inhabitants. Natchez, on the

Vicksburg. *Columbus*, on the Tombigbee, at the head of the ordinary steam navigation, contains about 3000 inhabitants.

LOUISIANA.—New Orleans, the capital, is situate on the left bank of the Mississippi, 100 miles from its mouth, but only 15 from the bay called Lake Borgne, and four from Lake Pontchartrain. Steam-boats and coasting vessels come up to the landing-place on the latter, where an artificial harbour has been formed, and from which a railroad and two canals extend to the city. In front of the city, on the river, the largest merchant-ships lie close along the shore, and discharge and receive their cargoes by means of a moveable platform adapted for the purpose. The river is about 160 feet deep, and about half a mile wide. The city is built on a flat of soft and marshy ground, declining from the river to the swamps in the rear, which, spreading all round, emit noxious exhalations during the hot season, and render the place a dangerous residence to strangers. The older part of the city consists of narrow streets, with old-fashioned French and Spanish houses, most of them only one storey high, and built of wood; but in the newer quarters tall brick-houses, in the American style, are most common. The population in 1836 amounted to about 70,000, who display the greatest variety in manners, language, and complexion. French and Spanish creoles are mingled with immigrants from all parts of the Union, from various countries of Europe, and with coloured persons of every shade. But the police is efficient and vigorous, and disturbances or acts of violence are rare. New Orleans is the emporium of the whole valley of the Mississippi. Thousands of huge arks and rafts float down the mighty stream for thousands of miles, loaded with the produce of the country. From 1500 to 2000 flat boats, from 50 to 60 steamers, and a forest of masts of sea-going vessels, are often to be seen at once along the levee, which protects the city from the river. The whole value of commercial transactions during the year probably exceeds £16,000,000 sterling. The banks of the river for 50 miles below the city are covered with sugar plantations; and a little lower down, at Plaquemine bend, the approach is defended by *Forts Jackson* and *St. Philip*. Below these there are no settlements, except at the little hamlet of *Balize*, 4 miles within the bar, occupied by a few pilots. The State contains no other important towns; but it possesses a great number of thriving villages, among which we may mention *Alexandria*, on the Red river, and *Natchitoches*, on the same river, 90 miles above it, and 190 from the Mississippi, with a population of 2500.

TENNESSEE.—Nashville, the capital, and chief commercial town, is situate on the left bank of the Cumberland river, in a highly picturesque and fertile country. It is a neatly-built town, with about 8000 inhabitants, and carries on an extensive trade. *Knoxville*, in East Tennessee, has a population of 2000, and is a place of considerable trade. *Memphis*, on the Mississippi, is a rapidly increasing town; and three miles below it the city of *Giran* has been founded. There are no other towns in the State, but a number of thriving villages.

KENTUCKY.—Frankfort, the capital, a small town with 2000 inhabitants, stands on the right bank of the Kentucky river, 70 miles from its mouth. *Louisville* is situate above the falls of the Ohio, and is a rapidly-increasing and well-built town with 25,000 inhabitants, various and extensive manufactures, and a great trade. The falls are only perceptible at low water; at other seasons they present no serious obstruction to navigation; but at all times the Louisville and Portland canal enables large steam-boats to reach Louisville. Below the falls are the villages of *Shippingport* and *Portland*, with good harbours. *Lexington*, one of the oldest towns, and formerly the capital of the State, is a spacious well-built town, with 6000 or 7000 inhabitants, 70 miles E. of Louisville, with which it is connected by a winding railroad. Kentucky contains, besides, a number of thriving villages.

OHIO.—Columbus, the capital, a regularly laid out and well-built town, on the Scioto, near the centre of the State, with about 5000 inhabitants. *Cincinnati*, a large city on the right bank of the Ohio, has grown with the most astonishing rapidity to its present extent and importance. It was founded in 1789; in 1800, its population amounted to 750; in 1820, to 9642, in 1830, to 24,831; and in 1836, was estimated to exceed 32,000, or, including Newport and Covington, 36,000. It is built on a very regular plan, with many elegant houses and public buildings; and has become the seat of large and numerous manufacturing establishments, and of an extensive trade, particularly in the article of pork, so many as 160,000 swine being slaughtered here in a year, besides what is brought from other places. *Cleveland*, on Lake Erie, at the mouth of the Cuyahoga creek, in a plain, 80 feet above the level of the lake, with spacious and regular streets, neat buildings, and 6425 inhabitants in 1837. The town is rapidly increasing, and promises to rival or even to take the precedence of Buffalo, owing to the lake in this quarter becoming sooner clear of ice. Cleveland has a safe and commodious harbour; and on the opposite side of the creek is *Ohio city*, a growing village, with 2000 inhabitants. *Fairport*, *Astabula*, *Conneaut*, and *Huron*, towns on the lake, with harbours. *Sandusky city*, on the southern shore of Sandusky bay, has a population of 2000, and is connected by a railroad with Monroeville and Tiffin. *Toledo*, a growing place, whose situation, at the mouth of the Maumee, will enable it to command the trade of north-western Ohio, north-eastern Indiana, and south-eastern Michigan. Its trade is already important. The village of *Manhattan*, three miles below, has been fixed on as the terminus of the Wabash and Miami canals. *Perrysburg*, higher up the river, is also advantageously situate, and may become a formidable rival to Toledo. *Hamilton*, on the Miami, is a busy prosperous town with 2500 inhabitants; and higher up is *Dayton*, with 3800. *Springfield*, on the Mad river, a rapidly-increasing, manufacturing, and commercial town, which doubled its population between 1830 and 1836; in which latter year it contained 2317 inhabitants.

INDIANA contains no large towns, but only a number of thriving villages; though one of them, *Madison*, on the Ohio, is advancing so rapidly as to have trebled its population in six years, the number of inhabitants in 1737 being about 4000. *Indianapolis*, the capital, stands on a beautiful plain, at the confluence of Fall creek with White river; but contains only about 2500 inhabitants. *New Albany*, below the falls of the Ohio, shares in the prosperity of Louisville, and contains already above 4000 inhabitants, with a considerable trade, several iron and brass foundries, &c.

ILLINOIS.—The towns of Illinois are small, but some of them are rapidly growing in importance, and there is, besides, a great number of thriving villages. *Springfield*, the capital, is situate near the centre of the State, and has a population of 2000. Along the Ohio are *Shawneetown*, *Golconda*, *Napoleon*, *Trinity*, *Cairo*; along the Mississippi, downwards, *Galena*, *Savanna*, *Fort Armstrong*, *Stevenson*, *Rockport*, *New Boston*, *Oquaucka*, *Appanooce*, *Commerce*, *Montebello*, *Warsaw*, *Quincy*, *Gilead*, *Milan*, *Grafton*, *Alton*, *Kaskaskia*; on the Illinois, *Juliet*, *Dresden*, *Marseilles*, *Ottawa*, *Hennepin*, *Peoria*, *Pekin*, *Beardstown*, *Erie*, *Rushville*, *Meredosia*, *Naples*, *Carrollton*, *Augusta*; on the Wabash, *Darwin*, *Palestine*, *Mount Carmel*; *Oregon city* on Rock river. *Chicago*, on lake Michigan, is the largest town in the State. In 1832 it contained only 250 inhabitants; in 1837, its population amounted to 8000. It stands at the point of the lake which makes the nearest approach to the Mississippi, and must necessarily become a great commercial station, as the adjoining country becomes more populous.

MICHIGAN.—Detroit, the capital, is neatly and regularly built on the west bank of Detroit river, and is becoming a place of great importance. In 1830 the population was 2220; in 1837, 8323. *Monroe*, 3 miles from the head of lake Erie, on the river Raisin, which is accessible for the largest lake

IV. *TEXAS.*

TEXAS or TEJAS (See note to page 531) formed one of the states of the Mexican confederation till 1835, when General Santa-Anna having violently dissolved the confederation, and established a central government in its stead, the Texians declared themselves independent, and successfully resisted his efforts to subdue them. They now claim not merely the old Mexican province, but the whole country between the south-western boundary of the United States and the Rio Bravo del Norte, from its source to the sea, being altogether an area of about 440,000 square miles, and extending about 400 miles along the north-western shore of the Gulf of Mexico. The surface along the shore, and to the distance of from 50 to 100 miles inland, is low and level, with occasional swamps and marshes, but is generally composed of arable prairie traversed by lines of wooded river bottoms. Above this low maritime plain the country becomes moderately undulating, no where attaining any considerable elevation, but is agreeably diversified by gracefully rounded swells, gentle slopes, and broad plains. This region is mostly prairie, or unwooded land, the trees being chiefly confined to the river valleys, and to scattered clumps, which rise, like islands, in the midst of a wide grassy expanse. These fine natural pastures were formerly filled with large herds of buffaloes or bisons, and droves of mustangs or wild horses, which have now been almost entirely exterminated or driven farther north. On the west several outlying ridges of the Sierra Madre, or great Mexican cordillera extend, around the heads of the rivers Nueces and Guadalupe, across the Colorado to the Brazos, where they subside into the elevated plains of Northern Texas. In the north-west are spread out vast unwooded plains, over which the wild native Indians still roam. The coast contains no good ship harbours, and but few inlets even for the smaller class of vessels. The spacious but shallow bays which receive most of the rivers, and the mouths of those rivers which enter the Gulf immediately, are barred by shifting sand-banks, the channels through which are often intricate, and rarely have more than 8 or 10, never more than 12 or 13, feet of water. From April till August, however, ships may ride at anchor securely on the coast in 6 or 8 fathoms; but during the rest of the year the heavy swell renders that impossible.

The climate may be described generally as mild, agreeable, and healthy. The maritime plain is, however, comparatively unhealthy, though fanned by the sea breeze during half the year. Scarcely any rain falls between March and November, and the vegetation often suffers from droughts. In November north winds from the mountains set in, and heavy rains begin to fall. These winds blow, with little deviation or intermission, during the months of December and January, when the mountains are covered with snow, and the cold is sometimes severe; but snow seldom lies long in the lower districts. In the early spring the rains are very copious. The live-oak is found of large size in the maritime region, chiefly between Galveston and Matagorda Bays; the white, red, post, and Spanish oaks, the cottonwood, ash, elm, and sycamore or buttonwood, the black walnut, hickory, pecan, locust, muskit, how wood, wild cherry, mulberry, persimmon, &c., are among the native productions of the forests. Between the Colorado and the Brazos are extensive cane brakes; almost every variety of grape is found growing spontaneously in many places; and it is believed that the most valuable grapes of Europe may be advantageously introduced. The soil and climate are favourable to the growth of the sugar-cane, indigo, vine, tobacco, rice, maize, sweet potatoes, and, in some parts to the cultivation of wheat, rye, oats. The prairies afford excellent pasture all the year round.

In 1821, Stephen Austin, an American citizen, obtained a grant of land in Texas from the Mexican Government. This was followed by other grants to him and to other persons, and, since the declaration of independence, a constant tide of immigration has set into Texas, and the Anglo-American population of the State is estimated already to exceed 200,000. About 70,000 or 80,000 Mexicans are also resident within the limits, but chiefly along the banks of the Rio Grande. The Indians are estimated at 30,000; while the total number of negroes is stated by some to be only 6000, but by others, more than 10,000. Since the defeat and capture of Santa-Anna, in April 1836, the republic has enjoyed uninterrupted repose, and its independence has been acknowledged by the United States, France, Holland, Belgium, and Great Britain. The constitution of the government is framed on the democratic principles prevalent in the United States; but as the territory is regarded as a single State, the constitution is more simple, and the government more efficient than the federal government of their neighbours. The first congress elected under the provisions of this constitution assembled in September 1836, and General Samuel Houston was elected the first president of the republic. A sound administration of justice has been established; schools and colleges have been founded; public buildings have been erected; the different parts of the country have been connected by roads, and by the improvement of the natural means of communication along the rivers.

The seat of Government has been established at *Houston*, a town of great and growing importance, situate at the head of Buffalo-bayou, a sort of creek or river, which runs into the north-western corner of Galveston Bay. It has sprung up with astonishing rapidity, and is already the centre of an extensive trade. The other principal towns are, *Nacogdoches*, *St. Augustine*, *Brazoria*, *Columbia*, *Marion*, *San Felipé d' Austin*, *Washington*, *Bastrop*, and *Sant' Antonio de Bexar*. Galveston Island stretches along the Gulf of Mexico for about 30 miles, opposite to the entrance to Galveston Bay. On the eastern part of it is laid off the site of the *City of Galveston*, which, though not central to the seaboard of Texas, may be made, by means of railroads of moderate extent, the depot for the produce of the most fertile sections of the country, and will probably become in consequence its principal commercial station.

(*Article Texas in Bradford's Atlas; History of the Revolution in Texas; with the latest geographical, topographical, and statistical Accounts of the Country, by the Rev. C. Newell.* New York, 1838, *Texas; its Rise, Progress, and Prospects; by William Kennedy*, 1841.)

V. *MEXICO or MEJICO.*

(*See Note to page* 531.)

This republic or confederation occupies the narrow tract of country between the Gulf of Mexico and the Pacific Ocean, from the 15° to the 33° N. lat., being about 1700 miles in length, with a breadth varying from about 140 miles at the south to 750 at the north, and including an area of about 1,230,000 square miles. The surface is extremely varied; the country is traversed through its centre by the great cordillera or central mountain chain of North America, which not only forms a complete watershed between the Atlantic and the Pacific Oceans, but also divides into two branches enclosing between them an elevated table-land, which rises abruptly from both coasts, and occasions a great diversity of climate, within a narrow space; so that, while the low country on the coasts is hot and unhealthy, the table-land generally enjoys a mild and equable temperature, rising, however, in some places to an arctic rigour. The most remarkable portion of this plateau is the Vale of Mexico, which is of an oval form, 55 miles long and 37 broad, surrounded by ridges of porphyritic and basaltic rocks, and containing a series of five lakes, which were formerly of considerable extent, but are now diminished by means of a great drain which carries their waters to the river Panuco. The water of

the lake of Tezcuco, the lowest of the five, is salt, but that of the other four is fresh. Mexico is very rich in the precious metals; and Humboldt states that at the period of his visit there were 3000 mines of gold and silver in the country, but the ignorance and misrule which prevail have much diminished their value as a source of wealth.

The temperature and climate are extremely various. The country is divided into three regions named respectively the tierras calientes, or hot regions; the tierras templadas, or temperate regions; and the tierras frias, or cold regions. The first include the low grounds on the east and west coasts, under the elevation of 2000 feet; the mean temperature is about 77° Fahrenheit; the country is especially suited for the growth and cultivation of sugar, indigo, cotton and bananas, which all flourish luxuriantly; but is almost inaccessible by sea for one half of the year, owing to the prevalence of boisterous gales and north winds; and during the other half is extremely unhealthy, from the oppressive heat and the great quantity of rain that falls. The coast then becomes the seat of pestilential fevers; and a European arriving for the first time at Vera-Cruz, or any other part of the coast within the tropic, in August, September, or October, has little chance of escaping the yellow fever. But, at the height of 3000 or 3500 feet above the level of the sea, that scourge is quite unknown. The temperate regions, which are of comparatively small extent, occupy the slopes of the mountains from about 2500 to 5000 feet of elevation. The mean heat of the year is from 68° to 70°, and the extremes of heat and cold are alike unknown. The Mexican oak and most of the fruits and cerealia of Europe flourish in this genial climate; fogs, however, are frequent, occasioning great humidity; but producing great beauty and strength of vegetation. The cold regions include the table-lands and the mountains elevated 5000 feet and upwards above the level of the sea. The mean temperature of the table-land generally may be about 62°; but in the city of Mexico it sometimes, though rarely, falls below the freezing point. In the cold season the mean heat of the day varies from 55° to 70°; while in summer it seldom rises in the shade above 75°. Above 8000 feet, the climate is severe and disagreeable; and, under the parallel of Mexico, the snow line varies from 12,000 to 15,000 feet above the level of the sea. The climate of the table-land is on the whole favourable to human life, and the prevalent diseases are believed to be more owing to the bad habits of the people than to the qualities of the soil and climate.

The classes of the population are singularly varied, and are characterized by distinctions more striking than those in any other country. Four distinct and rival classes may be enumerated: 1. The Chapetons or pure Spaniards, few in number, and now considered a degraded class; 2. The Creoles, or natives of European descent, forming the wealthiest and most powerful part of the population; 3. The Indians, or native Mexicans, forming the great mass of the labouring population; 4. The mixed classes, comprising mestizoes, mulattoes, zambos, &c. But, so far as political privileges are concerned, all distinction of colour has been abolished, and persons of all complexions are admitted to the enjoyment of equal civil rights. The actual amount of the population is unknown; but it has been variously estimated between 5,000,000 and 8,000,000.

The government is based on a constitution dated 4th October 1824, and modelled on that of the United States of North America. The country is divided into nineteen states, besides the federal district containing the capital, and three territories. Each of these divisions manages its own internal affairs; while the general interests of the confederation were entrusted to a Congress, consisting of a house of representatives, a senate, and a president. But the government is still extremely unsettled; insurrections are continually taking place; the laws are powerless, and general tranquillity is unknown. The Roman Catholic is the only publicly recognised religion, though others are tolerated; but religion has little influence over the white population, and the hold of the church over the Indians is fast diminishing; for they are all more or less inclined to return to their ancient idolatry. The necessity of education is recognised by the constitution, which requires the priests to teach all persons to read and write; but in practice it is little attended to; and the progress of science, literature, and the arts, has been completely checked by the unsettled state of the country since the revolution which separated Mexico from the dominion of Spain.

With respect to productive industry, every branch of it is in the lowest state. Agriculture is neglected, and even the lands which were cultivated by the Spaniards are now lying fallow. Artificial irrigation, which is necessary to fertilize the lands, is almost abandoned; and the agricultural implements are of the rudest kind. All this is owing in some measure to the very excellence of the soil and climate, which produce the necessaries of life with so little labour that the mass of the people, without motive for exertion, are habitually indolent and unenterprising. The mines of gold and silver have always been considered the main sources of wealth. Before the revolution about 21,000,000 dollars in silver, and about 2,000,000 in gold, were annually produced from somewhat more than 3000 mines; but, notwithstanding the introduction of European capital and skill into some of these mines, the general production has diminished considerably, owing principally to the total want of security for working the mines or conveying the produce; but also in some degree to the want of honest and efficient labourers. But the mineral wealth of the country is inexhaustible; and there is only required a vigorous and honest Government to make the production greater than ever. The foreign trade is quite insignificant, and manufactures are scarcely known. Soap is the chief manufacture, and the country possesses great advantages for its production. Tallow is plentiful and cheap; and the carbonate of soda abounds in the table-land of Anahuac and in many other places. There are large established manufactories of this article in Mexico, Puebla, and Guadalaxara, and elsewhere.

The states and territories which compose the confederation are: *Las Chiapas, Chihuahua, Coahuila, Durango, Guanaxuato, Mexico, Mechoacan, New-Leon, Oaxaca, Puebla, Queretaro, San Luis Potosi, Sonora* and *Sinaloa, Tabasco, Tamaulihas* or *New Santander, Vera-Cruz, Xalisco, Yucatan, Zacatecas;* the Federal district; and the territories of *New Mexico, Colima,* and *Tlascala.* (See note to page 531.)

Mexico or *Mejico* (anciently *Tenochtitlan*), the capital, is situate on a group of islands, formerly surrounded by the lake of Tezcuco, which, however, has been so much diminished by draining, that its margin is now 2¼ miles from the city, the intervening space remaining a swampy flat, and crossed by elevated causeways. Mexico stands about 7426 feet above the level of the sea, in N. lat. 19° 25′, and W. long. 101° 25′. It is said by Humboldt to be undoubtedly one of the finest cities ever built by Europeans in either hemisphere; being inferior only to St. Petersburg, Berlin, London, and Philadelphia, in respect of the regularity and breadth of its streets, and the extent of its public places, of which, the Plaza Mayor, or great square, is one of the finest to be seen in any city. It contains on one side the cathedral, a large and imposing pile, of mixed Gothic and Italian style, built on the site of the great temple of the god Mexitli, and containing several rich ornaments and curious remains of antiquity. The population amounts to 137,000, of whom one-half are creoles, and only about 6000 Europeans. The two sea-ports of Mexico are Vera-Cruz and Acapulco, the former on the east coast, the latter on the west. *Vera-Cruz* (founded by Cortes, who named it *Villa Rica de la Vera-Cruz*, rich city of the true cross), is situate on the shore of the Gulf of Mexico, in N. lat. 19° 11′. It is a well-built and handsome town, but extremely unhealthy. Opposite the town, at the distance of half-a-mile, on an island, is the strong castle of San Juan d'Ulloa, commanding the harbour, which is a mere anchorage, and exceedingly insecure. *Acapulco* is a small town, on a very fine bay of the Pacific S.S.W. of Mexico. It was formerly the seat of the trade between Mexico and the Philippine islands; but, in the present state of affairs, is comparatively unimportant. *Xalapa* or *Jalapa*, a large town of 12,000 inhabitants

stands on a little platform above Vera-Cruz, about 4335 feet above the level of the sea. It was formerly a place of great trade, but is now merely a resting-station between Mexico and the coast. *Puebla de los Angeles* (Angels' town), is a large manufacturing and well-built town, with 34,000 inhabitants, 70 miles S.E. of Mexico. The other principal towns are: *Queretaro, San Luis Potosi, Guadalaxara, Zacatecas, Durango, Monterey, Guanaxuato, Valladolid*, and *Tampico*, to the north and west of Mexico; *Atlixco, Guauchinango, Ametopeo, Tepeaca, Tehuacan, Hapa, Zacatlan, Oaxaca, Tehuantepec*, and *Ciudad Real*, to the south-east; *St. Blas*, a small sea-port town, on the Pacific, 400 miles W.N.W. of Mexico. At *Cholula*, to the north of Puebla, is a great pyramid, which rises by several stages 177 feet, from a base of 1423 on each side. A smaller but more elegant pyramid stands in the northern part of the state of Vera-Cruz. It is formed of large blocks of porphyry, highly polished, and rises by six stages 65 feet high, from a square base of 82 on the side. The mountains of Texcuco, east of the lake of Mexico, are nearly covered with the remains of ancient buildings and cities. Near *San Domingo de Palenque*, a village in Las Chiapas, are the imposing remains of an ancient city named *Culhuacan*, which, after being buried for ages in a thick forest, were first rediscovered in 1787. The ruins present the most curious and most remarkable monuments of the new world, consisting of temples, fortifications, tombs, pyramids, bridges, aqueducts, houses, vases, idols, medals, musical instruments, colossal statues, and well-executed figures in low relief, adorned with characters which appear to be real hieroglyphics. Every thing announces that the city was formerly the residence of a people far advanced in architectural skill, in sculpture and painting, a people whose tall and elegant figures, fine proportions and figures, bear no affinity to anything Asiatic, African, or Malay. The ruins extend for more than twenty miles along the summit of a ridge, which separates the country of the Mayas from the state of Chiapas, and must anciently have included a city and its suburbs.—*(See Jour. R. Geog. Soc. Lond.)*

VI. *CALIFORNIA.*

California was formerly subject to Spain, and afterwards to Mexico; but in 1836 the people revolted, declared the country independent, and established a congress of deputies for their future government. The exact boundaries, however, of the new state we are not acquainted with; and it is probable that they will still remain for sometime in dispute between the Californians and their neighbours of Mexico and Texas, and will probably form the fertile source of future wars, when these states become peopled towards their respective boundaries. The country at present included under the general name of California, extends from the borders of the Mexican province of Sonora, near the head of the Gulf of California, about 31° N. lat. to 42° N. lat., where it is conterminous with the Oregon territory claimed by the United States of North America. It also includes the long peninsular promontory, which forms the gulf, and terminates southward with Cape San Lucas, in 22° 48′ N. lat.; the eastern boundary being the Rocky Mountains, and the western, the Pacific Ocean. The country is naturally divided into two parts, the Old or Lower, and the New, or Upper. Old California comprehends the long peninsula, between the gulf and the Pacific Ocean, and extends about 700 miles in length, with a breadth varying from 30 to 100, comprising an area of about 38,000 square miles, with a scanty population of 14,000 or 15,000. A chain of rocky mountains, not exceeding 5000 feet in height, runs through it from south to north; and the surface of the country consists of groups of bare rocks, broken by ravines and hills, interspersed with barren sandy tracts, and forms altogether one of the most barren and unattractive regions within the temperate zone. It is said, however, to be rich in metals. The climate is excessively dry and hot, and violent hurricanes are frequent; timber is very scarce; and the greater part of the country is incapable of producing a single blade of corn. Some sheltered valleys only produce maize, and a variety of fruits, as dates, figs, &c. which are preserved and exported; wine is also made, and a kind of spirit is distilled from the must. Cattle are somewhat numerous; wolves, foxes, deer, goats, snakes, lizards, and scorpions are among the wild animals. The pearl fishery in the gulf has been famed from its first discovery; at present it produces annually pearls to the value of from 500 to 1000 dollars. Pearls, tortoise-shell, hides, dried beef, dried fruits, cheese, and soap constitute all the exports, which are mostly sent to Mazatlan and San Blas in small coasting vessels. The people are a feeble and indolent set of Indians, whom the Jesuits have partially converted to Christianity; but they are little advanced beyond the rudest stage of savage life, and depend for their subsistence on hunting and fishing, with the spontaneous produce of the soil.

Upper or New California extends from the Pacific Ocean to the Rocky mountains; but the only tract inhabited by European settlers is the narrow strip of land along the coast of the Pacific, which is bounded inward by the maritime range of hills, at the distance of about 40 miles from the sea. The surface of this region is very diversified, and consists of hills and plains of considerable extent; along the coast there are several good harbours, of which *San Francisco*, in lat. 38°, is one of the largest and best on the west coast of America. The rainy season is in winter, from November till February. During the rest of the year there is no rain, but a few showers fall in some places. In summer the heat is very great. The country offers nevertheless a striking contrast to the peninsula. There is a profusion of forest trees on the western side of the mountains along the coast; and many fine fruits are easily cultivated, though few are indigenous. Among these is a species of vine, which produces grapes of considerable size, and so plentiful, that considerable quantities of brandy are distilled from them. Among the wild animals are reckoned the American lion and tiger, buffaloes, stags, roes, elks, bears, wolves, jackals, wild cattle, foxes, polecats, otters, beavers, hares, rabbits, &c. Birds of various kinds are exceedingly abundant. But the great and most important article of produce is black cattle, the multiplication of which has been really prodigious. In 70 years the number had increased from 23 to 210,000 branded cattle, and probably 100,000 unbranded; and it is found necessary to slaughter 60,000 annually to keep down the stock. Sheep have increased with nearly the same rapidity, but are at present of little importance to the trade of the country. Between the maritime chain and the Rocky Mountains is a dry and sandy plain or desert, 700 miles in length, by 100 in breadth at its south end, and 200 at the north, which is traversed by the rivers Colorado and Gila, and forms the eastern limit of the inhabited, and indeed only habitable part of the country. The natives are a poor, filthy, pusillanimous set of Indians in the most primitive state of barbarism, except those who have been converted nominally to Christianity, and who have been taught a few of the simpler arts and practices of civilized life. These reside in missions, where the men are employed in agriculture, or in the warehouses or workshops of the mission, while the women are occupied in spinning, grinding corn, and other domestic duties. They are in fact slaves to the monks who possess the missions; and the greatest part of the land, and especially that to the south of Monterey, is in the hands of the missionaries. The total amount of free settlers, including those of mixed blood, does not exceed 5000. Besides the missions there is another class of settlements called *presidios*, which were formerly under the charge of military officers, belonging to the service of Spain or Mexico. The only place of importance, beside San Francisco, is *Monterey*, in lat. 35½ N.—*(Coulter, Notes on Upper California; Jour. R. Geog. Soc. V. 66.)*

VII. *YUCATAN.*

This State forms a large peninsula, situate between the Gulf of Mexico and the Bay of Honduras, between 17° and 22° N. lat., and 86° 30′ and 91° 20′ W. long.; is nearly 400 miles in length from north-east to south-west, by about 200 in breadth, and contains an area of about 76,000 square miles. The central part of the peninsula is occupied by a ridge of high ground, which becomes gradually lower as it advances to the north; at the southern extremity its elevation is about 2000 feet, but near Cape Catoche, it sinks to a few hundred. On the west side the ridge is skirted by an extensive plain, which, towards the north, is about 100 miles wide, and becomes narrower towards the south. Its surface is, however, so sandy and arid, that from the Bay of Campeché to Cape Catoche, there is not a single spring of fresh water along the coast. To the south of Cape Catoche on the eastern side of the peninsula, and also on the west coast, to the south of the Rio Francisco, near Campechá, as far as the mouth of the river Usamasinta, the country is undulating, and even hilly. The soil, except on the very shores, is less sandy, and the country is chiefly covered with lofty forest trees. The climate is hot but healthy. In some parts of the territory, maize, frijoles, rice, cotton, pepper, tobacco, and sugar, are raised; but the aridity of the soil is a great drawback to agriculture; the rainy season is very uncertain, so much so, that in some bad years the inhabitants are obliged to have recourse for subsistence to the roots which the woods supply. Bees' wax is collected in considerable quantity in the eastern districts. There are no mines; and the extensive trade which Yucatan once carried on with the Havanna, was stopped by the revolutionary war, and has not since been renewed. Yucatan formed, till recently, one of the members of the Mexican confederation; but the people have now separated from the union and declared themselves independent, on the same grounds as the Texians, and have established a constitution on the most liberal political, religious, and commercial principles. The population was estimated in 1837 at 570,000. They are chiefly whites, but there are also many Indians of the Maypa nation, who had attained a considerable degree of civilization before the arrival of the Spaniards, and some of them have maintained a sort of independence.

Merida, the capital, a very fine city, with a splendid cathedral, is situate on the arid plain, about 24 miles from the north coast. It carries on some trade in agricultural produce by means of the small harbour of *Sizal*, which is formed by a sandbank, and has little depth of water. Population, 35,000. *Campeché*, a fine handsome town, completely fortified, on the west coast, has a population of 16,000, and exports considerable quantities of wax, and of the dye-wood which goes by its name. Its harbour is not very safe; and large ships cannot lie near the town, on account of the shallowness of the water. Considerable quantities of the same wood are also exported from *Bacalar*, a town on the Rio Hondo, which flows into the Bay of Honduras, north of Belize. In the eastern part of the State, and particularly to the south of Merida, there are the remains of several ancient stone structures; one of which, called by the natives Oxmutal, is still in good preservation. It is about 600 feet square, the rooms, corridors, and pillars are ornamented with figures, in half relief, of serpents, lizards, &c., in stucco. There are also figures of men, in the attitude of dancers, and resembling in every respect those which are found in the ruins at Palenque.

VIII. *THE UNITED STATES OF CENTRAL AMERICA.*

These States include the narrow tract of country which extends from Mexico to the isthmus of Panama, between the Caribbean Sea and the Pacific Ocean, being about 1000 miles in length, and from 50 to 200 in breadth. They comprise an area of 196,000 square miles, with a population of about 2,000,000, divided into the five States of *Guatemala*, *Honduras*, *Nicaragua*, *Salvador*, *Costa Rica*, and the federal district of *San Salvador*, besides the almost independent territories of *Poyais*, and the Musquito Indians on the north-east coast. The country is chiefly occupied by a long range or ranges of mountains, which, as in Mexico, form a table-land in the central parts of the country, reaching the general elevation of about 6000 feet above the level of the sea. There are also two large plains, those of Nicaragua and Comayagua, besides many of smaller size on the banks of the rivers, and along the sea coasts, which contain many deep and capacious gulfs and excellent harbours. The low country on the coasts is exposed to violent heat, and is extremely unhealthy. At Izabal on the Golfo Dolce, the heat is often from 95° to 100, and at Ystapa, on the Pacific coast, it ranges between 86° and 90° in June. In the interior, however, an equable and agreeable temperature may be obtained at the different elevations; the city of New Guatemala, for instance, enjoys a temperature of perpetual spring, the thermometer ranging between 52° and 68°. The dry season lasts from October till the end of May, during which the north winds prevail. The rest of the year is called the wet season; but the rains, though heavy, fall only at night, and the days are generally fair and cloudless. Earthquakes are very frequent; and are supposed to be caused by the numerous volcanoes which are scattered along the southern shores, the loftiest and most remarkable of which is the *Volcano d' Aqua* (Water Volcano), near the city of Guatemala is Antigua, 13,630 feet above the level of the Pacific. This mountain has never emitted fire from its crater, but only torrents of water and stones. The country likewise abounds with warm and medicinal springs. The gold mines of Costa Rica, and the silver mines of Honduras, are rapidly increasing in their products. The soil is every where extremely rich. The great staple productions of the country, and its principal articles of exports, besides the precious metals, are indigo, cochineal, sarsaparilla, hides, mahogany, cedar, dyewoods, balsam of Peru, sugar, and rapadura, or panela. The last is a kind of brown sugar, chiefly used for the distilling of spirits. The country also produces tobacco as good as that of the Havanna, cocoa, cotton; wheat, abundantly in Quesaltenango and other places; vanilla, coffee, pimento, pitch and naphtha, caoutchouc, and various medicinal plants, balsams, gums, and drugs. The tea plant also abounds, and silk may be successfully cultivated. Two species of locusts are remarkable, the brown and the green. The seas abound in pearls, tortoises, whales, and fish of various kinds. The birds are celebrated for their great variety, and the extraordinary beauty of their plumage. All the kinds of fowls common in Europe are reared. Cattle, horses, asses, sheep, goats, and hogs are in abundance; and though the horses are not good, yet the mules are of a very superior breed. The population is divided into the four grand classes of Indians, whites, blacks, and ladinos or mulattoes; the relative numbers of whom are: Indians, 685,000; whites, 475,000; ladinos, 740,000. The number of blacks is very inconsiderable. The constitution grants equal rights and privileges to all.

The independence of Central America was established in 1823, when the people adopted a constitution providing that the government should be vested in a Federal Congress, a Senate, and a President, appointed, not directly by the people, but by means of electoral colleges. The monkish orders have been wholly abolished, but Catholicism remains the religion of the State. The Spanish laws have also been entirely abolished, and Mr. Livingston's Louisiana code established in their stead. The cities of the federation are twenty-nine in number. The first is *San Salvador*, the seat of the general government in the federal district, which forms a circle round the city, twenty miles in diameter, with a further extension of ten miles towards the south, so as to include the roadstead of *Libertad*, on the Pacific. The State of Guatemala is divided into seven departments, namely, Guatemala and Escuintla, Chiguimula and Zacapa, Vera-paz and Peten, Quesaltenango and Socunusco, Totonicapan, Sacatepequez and Chilnaltenango, Sololo and Suchitepequez. In 1834, "The Eastern

Coast of Central America Commercial and Agricultural Company," established in London, obtained from the Government of Guatemala a grant by charter of the whole of the department of Vera-paz, which is about 250 miles in length, and as much in breadth, lying between 15° and 19° N. lat., and 88° and 92° W. long., and comprising at least 14,000,000 of acres; and subsequently a further grant of the port and district of Santo Thomas, containing about 1,000,000 of acres, which extends to the Bay of Honduras, between the river Motagua, on the south, and the Golfo Dulce with its outlet on the north. The company have already established a number of British and German settlers in Vera-paz, where they have founded two cities, one named *Abbotsville*, on a branch of the river Polochic, about 100 miles from the sea, and another named *New-Liverpool*, on the river Cajabon, two miles above its confluence with the Polochic. They have also engaged to build a town at the splendid harbour of Santo Thomas, on the Bay of Honduras, between the river Motagua and the entrance to the Golfo Dulce, both of which are navigable for a great distance inland, and form the principal Atlantic outlets of the State of Guatemala. This harbour resembles in form the edge of a horse-shoe, with an entrance two miles across, and five fathoms deep; within, the breadth is about six miles, with a depth of six fathoms up to the very shore, and protected from every wind. The river Polochic, which forms the highway between the sea and the settlements in Vera-paz, runs from west to east-south-east for a direct distance of about 70 geographical miles, and falls into the *Golfo Dulce*, a fine lake, 24 geographical miles in length, by 10 in breadth, with an average depth of 6 or 8 fathoms on a bottom of bluish clay. The outlet of the lake forms a navigable river, which runs six miles, and then forms another lake, 9 miles by 2, named the "golfete" or little gulf, from which it runs 8 miles farther to the sea, between two ranges of hills, covered with impenetrable forests, and so overhung with verdure, as to be almost hidden at the entrance. The bar at its mouth has only 5 feet 9 inches water, and the Polochic is navigable only for vessels drawing less than 2½ feet.

The city of *Guatemala* is situate on an undulating plain 4961 feet above the level of the sea, at the distance of 26 leagues from the Pacific Ocean, in 14° 37′ N. lat. and 90° 30′ W. long. It is a well-built town with 40,000 inhabitants. *Old Guatemala (la Antigua Guatemala*, or *Santiago de los Caballeros de Guatemala)* is also a fine town amidst ruins, in a delightful valley, eight leagues west south-west of the new city, and containing 12,000 inhabitants. It has been several times destroyed by earthquakes and volcanic eruptions, and has been abandoned as the capital since the fatal earthquake of 1773. *Totonicapan*, the capital of the department of the same name, has a population of 12,000; *Quesaltenango*, 14,000; *Coban*, in Vera-paz, 14,000; *Salamá*, on the Polochic, 5000; *Izabal*, a village of about 40 huts, 3 houses, and a court-house, on the southern shore of the Golfo Dulce. The greatest part, however, of the export and import trade of Guatemala is carried on by the port of *Izabal*, and by that of *Omoa*, on the left of the entrance to the gulf.

The cities of Costa Rica, are, *San José*, *Cartago*, *Esparza*, *Alajuela*, *Heredia*, *Estrella*; of Nicaragua, *Leon*, *Granada*, *New Segovia*; of Honduras, *Comayagua*, *Tegusigalpa*, *Gracias*, *San Pedro Sula*, *Olanchito*, *Sonaguera*, *Trujillo* or *Truxillo*; of Salvador, *San Vicente*, *San Miguel*, *Santa Ana*, *Sonsonate*. The principal ports, besides *Izabal and Omoa*, are *Truxillo*, in the Bay of Honduras, *San Juan de Nicaragua*, *Moin*, and *Bocatoro* in the Caribbean Sea; *Calderas*, *El Realejo*, *La Union*, *Libertad*, *Acajutla*, and *Itapa*, in the Pacific

IX. *COLOMBIA, comprising the Republics of VENEZUELA, NEW GRANADA, and ECUADOR.*

After the revolt of the Spanish colonies, those in the north-western part of South America were formed into a large State, which assumed the name of Colombia or Columbia, in honour of the great discoverer; but, since 1831, Colombia has been divided into the three independent republics of Venezuela, New Granada, and Ecuador or Equator; the first occupying the north-eastern, the second, the north-western and central, and the third, the southern portions of the country. Colombia is situate between 12° 25′ N. and 5° S. lat., and between 60° and 83° W. long.; being about 1320 miles from east to west, and 1100 from north to south, and comprising an area of 1,160,000 square miles. The country is now divided among the new republics in the following proportions, namely, Venezuela, which comprehends 450,000 miles, with 900,000 inhabitants; New Granada, 390,000 miles, with 1,687,000 inhabitants; and Ecuador, 325,000 miles, with 600,000 inhabitants. The country is naturally divided into three zones or belts. The first comprehends the portion between the Pacific Ocean and the Caribbean Sea and the Andes; the second, the mountainous region; the third, the immense savannahs which stretch southward and eastward from the Andes to the river Amazon, with the mountain border of the basin of the Orinoco. The coast along the Caribbean Sea extends 2000 miles, and is indented with bays and inlets; that along the Pacific extends 1200 miles.

VENEZUELA comprises the eastern part of the country, stretching along the Atlantic Ocean and the Caribbean Sea, from the river Essequibo to the west side of the gulf of Maracaybo; and is divided into four departments, whose names and principal towns are stated in the following table:—

Departments.	*Cities and Towns.*
VENEZUELA, .	Caracas, La Guayra, Vittoria, Maracay, Calabozo, Los Reyes; Valencia, Puerto-Cabello, Tocuyo, Carora, San-Carlos, San Felipe, Aroa.
MATURIN, . .	Cumana, Barcelona, Assumpcion, Cariaco, Guiria, Carupano, Cumanacoa, Maturin, Aragua, Maniquarez, El Pao, San Diego, Piritu, Painpatar.
ORINOCO, . .	Varinas, Achagua, Angostura; Guanare, Obispos, Araure, Ospino, Nutrias, San Fernando, Mantecal, Payara, Esmeralda.
ZULIA, . . .	Maracaybo, Coro, Truxillo, Merida, Gibraltar.

Caracas, the capital, is situated in a delightful valley, at the foot of the peak of Silla, 330 feet above the level of the sea; but having been entirely destroyed by an earthquake in 1812, it has scarcely yet risen from its ruins. It is, however, the centre of a great trade with the interior, and contains upwards of 20,000 inhabitants. *La-Guayra*, a small sea-port town, with 4000 inhabitants, has a bad harbour, and an unhealthy climate, but is of great importance as the port of Caracas. *Valencia*, a considerable town, with 15,000 inhabitants, in a fine situation, with a healthy climate. *Puerto-Cabello*, an important sea-port town with a good harbour and a great trade, but in an unhealthy situation, and having only a population of 3000; 68° W. long. *Cumana*, a decayed city, with 10,000 inhabitants, is rendered important by its fortifications, trade, and fine bay, which is capable of receiving all the navies of Europe, with excellent anchorage for large ships, but the climate is intensely hot; W. long. 64° 16′. *Varinas*, south of the Lake of Maracaybo, was once a flourishing city, but has now declined to a population of about 3000. *Angostura* or *New-Guyana*, a small episcopal city on the Orinoco, with 3000 inhabitants, is important from its situation as a shipping port on the river. *Maracaybo*, a fine town on the west side of the strait which connects the lake with the bay of the same name, possesses a college, a pilot-school, several building slips, and is defended by three forts. Population 20,000. *Merida*, a small city with 5000 inhabitants, contains a university of the second rank, and a college. The Island of *Margarita* is situated off the coast of Cumana, from which it is separated by a channel

20 miles wide, through which all vessels coming from Europe, or windward of Cumana, Barcelona, and La Guayra must pass in going to those ports. The island is 37 miles long and from 5 to 20 wide, with a population of 15,000. It derives its name from the pearl fishery, for which it was once much celebrated, but which has greatly declined. The island is of little value. The chief towns are *Assumpcion*, the capital, in the centre, and *Pampatar*, on the south-east coast, with a good harbour, and anchorage in seven or eight fathoms water.

NEW-GRANADA comprises the isthmus of Panama, and the adjacent north-western part of South America. It is divided into four departments, whose names and chief towns are stated in the following table:—

Departments.	*Cities and Towns.*
CUNDINAMARCA, .	Bogotá (or Santa Fe de Bogotá), Medellin, Neyba, Honda, Antioquia.
CAUCA, ...	Popayan, Pasto, Iscuande, Quibdo.
ISTHMO, ...	Panama, Porto-Velo (Portobello), Chagres, Santiago de Veragua.
MAGDALENA, . .	Carthagena, Mompox, Santa-Marta, Rio-Hacha.
BOYACA, ...	Tunja, Pamplona, Cucuta, Socorro, Pore.

Bogotá, the capital, is situate at the foot of two mountains which shelter it from the violent east winds, on an elevated table-land, 8630 feet above the level of the sea, in N. lat. 4° 37′ and W. long. 74° 10′. The temperature of the atmosphere is fine and equable, but the climate is exceedingly humid, though not unhealthy. Externally, the city has an imposing appearance, but the streets are generally narrow though regular, with low houses. Nearly half its area is occupied by religious buildings, there being 26 churches besides the cathedral, 9 monasteries, and 3 nunneries. Population about 20,000. (See *ante*, p. 873). *Popayan*, a fine city, in a beautiful situation, near the sources of the river Cauca, contains a mint, a university, and about 7000 inhabitants. *Panama* is a well-built city, on a peninsula of the southern coast of the isthmus to which it gives its name. It has no harbour, but only a bad roadstead, and the population does not exceed 10,000. *Porto-Velo* or *Portobello* is a very small town or village on a fine natural harbour, but in so unhealthy a situation that it has acquired the title of the grave of Europeans. It stands on the north side of the isthmus, nearly opposite Panama. *Chagres*, a small town west of Portobello, derives its importance from its situation at the mouth of a river which affords an accessible passage from the north coast to within a short distance of Panama. *Carthagena*, an episcopal city on a sandy island off the north coast to the westward of the Rio Magdalena, possesses one of the finest harbours in America. It is strongly fortified, and contains about 18,000 inhabitants; and though much decayed, is still the centre of a considerable trade. *Santa-Marta*, a fortified town, on the coast to the eastward of the Magdalena, with considerable trade and 6000 inhabitants. *Rio-Hacha*, farther east, is a small town with only 1000 inhabitants, but is noted for the pearl fishery in its vicinity.

ECUADOR is so named from its lying under the equator, and extends only a few degrees of latitude to the north and south of it. It is divided into three departments, as stated in the following table:—

Departments.	*Cities and Towns.*
ECUADOR, ...	Quito, Antisana, Tacunga, Esmeraldas, Riobamba, Ibarra.
GUAYAQUIL, . . .	Guayaquil, Puerto-Viejo.
ASSUAY, ...	Cuença, Loxa, Cañar, Giron.

Quito is a large but ill-built city, in a valley enclosed by two ranges of the Andes, 9630 feet above the level of the sea, with a population of about 70,000. *Riobamba* is also a large town, with 20,000 inhabitants. *Guayaquil* is a commercial and seaport town, on a bay of the Pacific, with 22,000 inhabitants. *Cuenca* is a well-built city, with 20,000 inhabitants. About 30 miles from Cuenca is the famous *Paramo d' Assuay*, where many travellers perish from its terrible storms.

X. *THE REPUBLIC OF PERU.*

This Republic is situate on the western side of South America, having Ecuador and Brazil on the north; Bolivia and the Pacific Ocean on the south; Brazil and Bolivia on the east; and the Pacific Ocean on the west; between 3° and 22° S. lat., and between 63° and 81° 20′ W. long., being about 1500 miles in length, by 900 in breadth, and comprising an area of considerably more than 500,000 English square miles. The western portion of the territory is occupied by the highest ranges of the Andes, with their offsets and intervening valleys, while the eastern part slopes down into the great plains which occupy the centre of the continent, and are drained by the affluents of the La Plata and the Amazon. The independence of Peru was declared on the 15th, and more formally announced on the 28th of July 1821. In May 1822, a congress, which assembled at Lima, formed the plan of a constitution on the model of that of the United States of North America. But the government is still extremely unsettled, and in 1837 the country was placed under the protection of the president of Bolivia. It is divided into seven departments:—

Departments.	*Cities, Towns, &c.*	*Departments.*	*Cities, Towns, &c.*
LIMA, . .	Lima, Callao, &c.	AYACUCHO, .	Huamanga, Huancabelica, Jauja.
AREQUIPA .	Arequipa, Arica.	JUNIN, . .	Huanuco, Pasco, Junin, Baños.
PUNO, . .	Puno, Chucuito, Lampa.	LIBERTAD, .	Truxillo, Sechura, Payta.
CUZCO, . .	Cuzco, Abancay, Tinta, Urubamba.		

In 1836, however, the representatives of the four southern provinces assembled at Sicuani, declared their separation from the republic of Peru, and their incorporation as an independent state, under the title of *Estado Sud Peruano*, The South Peruvian State. This new State embraces the four provinces of Cuzco, Ayacucho, Puno, and Arequipa; the largest portion of its territory is situate among the Andes, or in the valleys which descend from the Cordillera. They are inhabited by a very numerous, agricultural, and industrious Indian population, and have hitherto formed the fairest portion of the Peruvian State. The assembly of Sicuani placed their country under the protection of General Santa Cruz, the enlightened president of Bolivia, whose administration of that republic, since 1829, had rendered it the model of good government, internal tranquillity, and financial prosperity.

Lima, the capital, is situate on the river Rimac, in a delightful valley, between 500 and 600 feet above the level of the sea, at the distance of six miles from the Pacific, in S. lat. 12°2′, and W. long. 77°17′. It is surrounded by a parapet wall about 7 miles in circuit; and, when seen from a distance, has an imposing appearance. The interior is divided into squares of houses, with streets crossing each other at right angles; but, on account of the frequency of earthquakes, few houses are more than one storey high, and the roofs are uniformly flat; and, till of late years, few of the windows had either glass or sashes. Besides a great many convents and nunneries, with churches attached, the city contains 57 churches and 25 chapels. The cathedral, founded by Pizzaro, and containing his remains, is a large fine building, with a magnificent interior. Several of the conventual churches are also remarkably rich. Lima is still the emporium of the trade of Peru, in which most of its inhabitants are engaged; the manufactures are insignificant. According to a census in 1818, the population amounted to 54,094.

Callao, the port of Lima, is connected with the city by a straight road, six miles in length. It is well fortified, but the houses are poor and mean, consisting of mud walls and flat roofs. The roadstead is the best in Peru; and there is a rudely constructed pier, at which vessels may load and unload. *Arequipa*, in the valley of Quilca, 7700 feet above the level of the sea, from which it is 30 miles distant, in S. lat. 16° 30′, is a large town, with about 30,000 inhabitants. *Arica*, a seaport town on the Pacific, in S. lat. 18° 28′, a poor town, is the natural outlet of one of the principal mining districts of South America, and of a large extent of country; but, owing to the heavy surf which beats upon the shore, it is always difficult, and sometimes impossible, to effect a landing, except in the balsas of the natives, which are a sort of floats made of inflated seal-skins. The town has only between 200 and 300 inhabitants. *Puno*, the capital of a department, is said to have 18,000 inhabitants. *Cuzco*, the ancient capital of Peru, is nearly as large as Lima, but not quite so populous, the number of its inhabitants amounting, in 1826, to 46,123. It is situated in a valley or plateau 11,380 feet above the level of the sea, about 400 miles E.S.E. of Lima, in S. lat. 13° 30′. The cathedral, and the convent of St. Augustine, are said to rank among the finest religious buildings of the New World. It still contains several remains of the architecture of the Incas, and many of the private houses belong to that era. The people are said to be industrious, and to excel in embroidery, painting, and sculpture. Cuzco contains manufactories of cotton, linen, and woollen stuffs, leather, and parchment; and has a considerable trade in these and the products of the adjacent district. *Huamanga*, the chief town of the department of Ayacucho, is a large and flourishing commercial town, with 39,000 inhabitants. *Truxillo* is a fine city, with 14,000 inhabitants, on the coast, 300 miles N.N.W. of Lima. The *desert of Atacama* divides Peru from Chili, and is nearly 10 miles in length, through which a river abounding in salt flows. It seems to have been the favourite burying-place of the Peruvians for successive ages. The climate, salt, and sand dry up the bodies, and the remains of whole generations may now be seen there, after the lapse of perhaps thousands of years.

XI. *BOLIVIA or UPPER PERU*

Is situate between 9° 30′ and 25° 40′ S. lat., and 58° and 71° W. long., having Lower Peru, on the north and north-west; Brazil and Paraguay, on the east; Chili and La Plata, on the south; and the Pacific Ocean, on the west. It is about 1100 miles in length N.-S., and about 750 in breadth, and comprises an area of about 320,000 English square miles. In the west it is traversed by lofty mountains, while in the east it stretches into immense plains. Upper Peru remained in possession of the Spanish Government till 1824, when it was rescued from their grasp by the battle of Ayacucho, and its independence declared in August 1825. The government is still unsettled, and has already experienced many changes. The statistics and present state of the country are very imperfectly known, and the population of both the country and the cities is very variously estimated. Balbi states the general population at 1,300,000; Brackenridge, at 1,716,000; while some estimate it so low as 650,000. More than three-fourths of the people are believed to be aborigines; but though in a low state of civilization, they have been converted to Catholicism. The country is very unfavourably situated for communicating with foreign nations.

Chuquisaca, formerly *Charcas*, the capital, is a considerable town, with 12,000 inhabitants, situate in a plain 9250 feet above the level of the sea, on the east side of the Andes. *La Paz d' Ayacucho* is a large episcopal city, with 40,000 inhabitants, in a deep valley, 10,883 feet about the level of the sea; a few miles to the south-east is the Nevado d'Illimani, the highest peak of the Andes, after that of Sorata. *Tiahuanacu*, near the lake of Titicaca, is celebrated for its ruins, which are believed to be the remains of a people who possessed the country before the rise of the empire of the Incas. The islet *Titicaca*, which gives its name to the lake, is celebrated in Peruvian history as the place where Manco Capac received the divine call to be the lawgiver of Peru. The Peruvians consequently regarded it as a sacred place, and the Incas built upon it a temple of the sun, which they covered with plates of gold; and to it people brought from all parts of the empire rich offerings of gold, silver, and precious stones; all of which are said to have been cast into the lake at the arrival of the Spaniards. *Potosi*, a large but decayed city, at the foot of the Cerro de Potosi, which has been celebrated for the prodigious quantity of silver obtained from it since the mine was first discovered in 1545. The mountain is pierced with mines in every direction. The great square of the city is 13,314 feet above the level of the sea. At the time of its greatest prosperity the city contained 160,000 inhabitants; but in 1826 the number was reduced to 9000. *Cochabamba* is a large city, with 30,000 inhabitants, in a fertile and well-cultivated country. *Santa-Cruz-de-la-Sierra* is a small and ill-built episcopal city, in the midst of an immense plain, with 9000 inhabitants.

XII. *CHILI or CHILE (TSHEELEE)*

Is situate between 25° and 44° S. lat., along the coast of the Pacific, and comprises the country between the crests of the Andes and the sea, being about 1150 miles in length, by 120 in breadth, and containing an area of 130,000 square English miles. The shores are mostly high, steep, and rocky; but have almost every where deep water: there are several tolerable harbours, the best of which are those of Valdivia, Conception, Valparaiso, and Coquimbo. The climate is equable and healthy. Both the climate and the soil of the southern and the central parts are suited to the culture of European grains; but only the middle provinces produce a sufficient quantity of corn to admit of exportation. Wheat is the staple, and, in the north, almost the only grain cultivated. Barley is grown in the south; but agriculture generally is in a very backward state,; the breeding of cattle is the most important branch of rural industry. Some farms feed from 10,000 to 15,000 head: some even so many as 20,000; and the smallest contain from 4000 to 5000. The horses, mules, and asses, are well made, and useful animals; the sheep are said to be very inferior. The people are chiefly of Spanish and Indian descent; but there are some negroes and mulattoes. Their religion is the Roman Catholic; but the clergy are not numerous; other religions are tolerated, though the exercise of their public worship is not allowed. The executive government is vested in a president and council; the legislative, in a congress of 56 members, who are elected by the provinces. The Chilenos are good potters, and make light and strong earthenware jars which ring like metal. Canvas, cordage, soap, copper-wares, leather, brandy, tallow, and charcoal, are the chief articles manufactured. The commerce has of late years been rapidly increasing. Most of the foreign trade is maintained with Great Britain; the exports are chiefly bullion, copper, hides, tallow, pulse, wheat, fruit, and drugs. *Valparaiso* is the principal port, and the centre of the foreign trade. There is little means of internal communication. The only towns of any importance, except the capital, are situate on or near the coast, at a great distance from each other, and there are few or no roads which are passable by carts.

Santiago, the capital, is situate on the banks of the river Mapocho or Topocalma, in a vast plain, and has a delightful climate. It is well built, with several fine public buildings, and contains about 55,000 inhabitants. *Valparaiso*, a fine newly-built town, with 20,000 inhabitants, is the principal seaport and the centre of the foreign trade of Chili. It has a fine harbour, with an easy entrance, sheltered from all winds except the north wind, which blows violently in winter. *Coquimbo*, a considerable seaport, with 12,000 inhabitants. *Concepcion*, a regularly built town, with 10,000 inhabitants, near the

mouth of the river Biobio, was completely ruined by an earthquake in 1835. *Valdivia*, a small fortified town, in the Araucanian territory, with a superb natural harbour, which is considered as one of the finest in America. Population about 5000.

XIII. *THE UNITED PROVINCES OF LA PLATA, or THE ARGENTINE REPUBLIC.*

These provinces, with the exception of Paraguay and Banda Oriental, comprise the whole of that vast country which lies between Brazil and the Cordillera of Chili and Peru, and extends from the 22° to the 41° S. lat. They comprehend altogether an area of 726,000 square miles, with a population of 600,000 or 700,000 inhabitants. This vast territory is now divided into thirteen provinces, which govern themselves independently to a certain degree; though, for all general and national purposes, they are confederated by conventional agreements. From the want of a more defined national executive, the provincial government of Buenos-Ayres is temporarily charged with carrying on the business of the Union with foreign powers, and with the management of all matters that concern the republic in common. The executive power of that government is vested in the governor or captain-general, aided by a council of ministers chosen by himself, and responsible to the junta or legislative assembly of the province by whom he is elected.

Estimated Population of the Provinces in 1836–7.

Province of Buenos Ayres,	from 180,000 to 200,000		Province of Catamarca,	. from	20,000 to 35,000
.....	Santa Fe, . . . „	15,000 „ 20,000	.....	La Rioja, . . „	15,000 „ 20,000
.....	Entre-Rios, . . „	30,000 „ 35,000	.....	San Luis, . . „	25,000 „ 30,000
.....	Corrientes, . . „	35,000 „ 40,000	.....	Mendoza, . . „	25,000 „ 40,000
.....	Cordova, . . „	80,000 „ 85,000	.....	San Juan, . . „	22,000 „ 25,000
.....	Santiago, . . „	15,000 „ 50,000			
.....	Tucuman, . . „	40,000 „ 45,000			From 600,000 to 670,000
.....	Salta, ... „	50,000 „ 60,000			

Besides the independent Indians within the territory claimed by the republic.

Excepting only along the western and the eastern borders, where the offsets of the Chilian, Peruvian, and Brazilian Andes are found, the whole of this region is a vast plain, traversed in its northern and central portions by the numerous affluents of the Plata, and stretching out to the south-west into the boundless *pampas*. These plains, reaching from the eastern terminations of the Andes to the shores of the Plata, appear to be one immense bed of alluvium, tranquilly deposited during the lapse of ages, and now presenting a uniformly level surface, which is covered with long grass. Towards the north-west, between the provinces of Cordova, Santiago, Catamarca, and La Rioja, between 29° and 30° S. lat., is a vast sandy plain, from 30 to 40 leagues in breadth, which is for the most part covered with a saline efflorescence, and produces a salsola, from the ashes of which soda is extracted. It is called the *Travesia* or *Las Salinas*. The country is capable of producing, in its northern and central portions, all the usual productions of tropical countries, and in the south it yields good wheat; but hitherto the staple articles of produce have been animal and mineral only. Gold, silver, and copper are exported in small quantities; but ox-hides, horse-hides, and horns, in enormous quantities, with beef, horse-hair, sheep's-wool, chinchilla skins, tallow, sheep-skins, &c., in smaller quantity. The value of the ox-hides exported in 1837 was 3,294,540 dollars; of horse-hides, 38,046 dollars; of horns 416,192 dollars; and of the total exports, 5,637,138 dollars, or £1,127,427 sterling. The hides and horns, which form two-thirds of the value of the exports, are the produce of the vast herds of horses and bovines reared mostly in the pampas, which are no longer a useless and unappropriated waste, in which the animals run wild as formerly, but have been carefully measured out and allotted to individuals who are obliged to set up and preserve their marks of possession. It is calculated by the best authorities that the most extensive proprietors in the province, that the present stock of cattle, in the territory of Buenos Ayres alone, may be from three to four millions; and it is supposed there may be a similar number in the other provinces. From this we ought to calculate upon an annual exportation of nearly a million of hides, with a gradual increase.— *Buenos Ayres and the Provinces of the Rio de la Plata, their present State, Trade, &c., by Sir Woodbine Parish, K.C.H., &c.* Lond. 1839.

Buenos Ayres, the capital, is situated on the south-western shore of the Plata, in S. lat. 34° 36′. It is built on a regular plan, with streets crossing each other at right angles, which are now tolerably well paved, and provided with footpaths; but contains no public buildings of any importance, except, perhaps, the cathedral, a large and handsome building, the interior of which is profusely decorated with carving and gilding. The population amounts to about 100,000; of whom from 15,000 to 20,000 are foreign, chiefly English and French. Though close to the river the city has no harbour, and vessels drawing 16 or 17 feet water anchor in the outer roads, 7 or 8 miles from the shore, loading and discharging by means of lighters. Between the outer and the inner roads there is a dangerous bar, and as the water becomes so shallow on the beach, that even boats cannot come close to the shore, but are met in the water by ox-carts, in which the goods are deposited, at no little risk, and sometimes with much loss. The climate of Buenos Ayres is influenced not so much by its latitude as by the wind, a change of which produces an alteration of 20° or 30° in the thermometer. The heat in summer is at times almost intolerable; the thermometer being perhaps at 90° within doors, and all nature gasping for air; but on those very days the most experienced of the natives are clothed in warm woollens instead of linen jackets, for fear of catching cold. During the greater part of the year the prevailing winds are northerly; and these passing over the marshy tracts of the interior, and the broad expanse of the Plata, bring with them a great degree of humidity, which produces a certain lassitude and relaxation, and induces great liability to colds, sore throats, and other evil consequences of checked perspiration. Buenos Ayres is, however, free from agues and fevers, which are rarely known. But from the bad effects of the north wind the atmosphere is occasionally most effectually cleared by the *pamperos* or south-west winds, which, originating among the snows of the Andes, and rushing with unchecked violence across the pampas, become often hurricanes before they reach the city, and not unfrequently bring with them clouds of dust, which occasion almost total darkness. Sometimes also the pampero is accompanied by the most terrific thunder and lightning than which nothing can be more appalling. The city of *Corrientes*, founded in 1588, is situate in S. lat. 27° 27′, at the junction of the rivers Parana and Paraguay, which afford every facility for an active commercial intercourse with the most remote parts of the republic, as well as with the sea, but without steam navigation, which has not yet been introduced, these cannot be made available. *Cordova* is situate in S. lat. 31° 26′, 172 leagues distant by the post-road from Buenos Ayres, in a pleasant valley, on the banks of the river Primero. It contains many churches, and is the seat of a university, once held in great repute, but now dwindled down to the dimensions of a provincial school. At present Cordova forms a sort of centre of communication between the upper provinces and Buenos Ayres. *Santiago-del-Estero*, a miserable, ill-built place, with 4000 inhabitants, in S. lat. 27° 47′; and, 40 leagues beyond Santiago, is the city of *San-Miguel-de-Tucuman*, in an elevated plain, where the climate, though hot, is dry and salubrious; and where nature has been so prodigal

of her choicest gifts, that the province of Tucuman well merits its appellation of the garden of the United Provinces. The city contains from 7000 to 8000 inhabitants. *Catamarca*, 60 leagues S.W. of Tucuman, contains about 4000 inhabitants; the city of *Salta*, in lat. 24° 30', and 414 leagues from Buenos Ayres, contains between 8000 and 9000; *Mendoza*, 32° 52' S. lat. and 69° 15' W. long., and 4891 feet above the level of the sea, contains about 10,000 inhabitants. About 106 miles W. by N. of the city is the volcano of Aconcagua, one of the highest of the Andes. The most southern settlement of the Buenos Ayreans is the little town *Del Carmen*, on the Rio Negro.

XIV. *PARAGUAY*

Is situated between 20° and 28° S. lat., extending along the eastern bank of the river Paraguay, from the Rio Parana to the Rio Blanco, about 450 miles, with a breadth of 180 miles; and is bounded on the south and east by the Parana. It comprises an area of about 80,000 square English miles, with a population of about 250,000. Besides the natural productions common to the region and climate, Paraguay produces a species of tea, called yerba-maté, which is as much in general use and demand through all the provinces of La Plata, Chili, and many parts of Peru, as the teas of China are in Europe. The plant which produces it (Ilex Paraguayensis) of which there are three species, is an evergreen, about the size of an orange tree, which grows wild and in great abundance in the dense forests of the northern and eastern parts of the province, to which the people repair yearly in numerous gangs to collect it. When the colonies revolted in 1810, the people of Paraguay refused to acknowledge the central government established at Buenos Ayres, declared their absolute independence, and established a government, the whole power and direction of which fell ultimately into the hands of Dr. Don José Gaspar de Francia, who has ruled the province for many years as absolute dictator, exhibiting a systematic selfishness, cruelty, and despotism, almost unparalleled in the history of any country. His revenue arises chiefly from properties confiscated, and from tithes in kind on all articles of produce. The principal expenditure consists in the maintenance of a large militia force, in which every person capable of bearing arms is enrolled and obliged to do duty in his turn. Francia is of course commander-in-chief of the army, and is head of the church, the law, and every other branch of administration. The only trade has been carried on on his own account, and merely such as has been necessary to further his policy of habituating the people to look to him and to him only for the supply of all their wants.—(*Parish*, 226, &c.)

Asuncion (Assumption) the capital, is finely situate on an eminence on the left bank of the Paraguay, in S. lat. 25° 16'. It is an ill-built town, with unpaved streets, and houses little better than huts, but contains about 10,000 inhabitants. It is the centre of a considerable trade in hides, tobacco, timber, yerba-maté, wax, &c.; and the adjacent country is comparatively well cultivated and populous.—(*Robertson's Paraguay*, I. 288.)

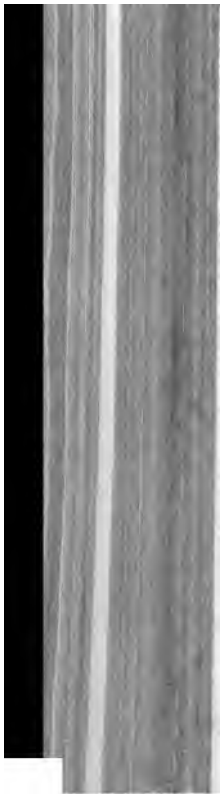
XV. *URUGUAY, or the BANDA ORIENTAL.*

This is a very compact territory, extending along the northern shore of the Plata, and is bounded on the west by the river Uruguay, on the south-east by the Atlantic Ocean, and on the north-east and north by the Brazilian territory; comprising an area of about 75,000 square English miles, with a population of about 120,000, which is rapidly increasing. It was formerly a portion of the vice-royalty of Buenos Ayres; being afterwards subdued by the Portuguese, it became a province of Brazil; but, at last, by an article in the treaty of peace between Brazil and Buenos Ayres, it was declared independent.

Monte Video, the capital, is a fortified town with a citadel, situate on a peninsula on the northern shore of the Plata, 125 miles E. by S. of Buenos Ayres, and contains 10,000 inhabitants. The houses are built of stone or brick, but are seldom more than one storey high, and flat-roofed; and the streets are unpaved, so that they are either clouded with dust or loaded with mud, as the weather happens to be wet or dry. The town is ill supplied with water, and contains no public buildings of any importance; but the harbour is the best on the Plata. It is a large circular basin open to the south-west, and having on its western side the hill (*Monte Video*), from which the city derives its name. On the top of the hill is a lighthouse, the lantern of which is 475 feet above the level of the sea. *Maldonado*, 85 miles E. of the capital, is a fortified seaport town on the Plata. It is a small quiet town, with scarcely any trade. *Colonia del Sacramento* is a seaport town at the Plata, nearly opposite Buenos Ayres.

XVI. *THE EMPIRE OF BRAZIL.*

This extensive territory stretches along the Atlantic Ocean from 4° 17' N. to 33° S. lat., about 4000 miles, occupying the eastern part and a large portion of the centre of the continent to the extent of about 2,500,000 square miles. Nearly two-thirds of the country consist of high lands and mountains; and the cultivated lands bear a very small proportion to those still lying in a state of nature. The total population has been estimated at 5,300,000. The most celebrated of the natural productions of Brazil are diamonds, which are found in the provinces of Minas-Geraes, Minas-Novas, Goyas, and Matto-Grosso. The most celebrated mines are those of Serra-do-Frio, which are also known by the name of the Arrayal Diamantino, or Diamond district. This district is surrounded by almost inaccessible rocks, and used to be guarded with so much vigilance that not even the governor of the province had the liberty of entering it, without the special permission of the director of the mines. Gold and silver are also supposed to exist in great abundance; and, after Mexico and Peru, Brazil has furnished Europe with the greatest quantity of these precious metals. Iron abounds in the mountain chain of Morro near Villarica, and in other places; while in the province of Minas-Geraes, there is a mine of magnetic iron-stone, containing from 80 to 90 per cent. of pure iron. Platina and copper have also been found in Minas-Geraes. Precious stones abound in Brazil, especially topazes, of which there are a great many varieties. Among the vegetable productions are sugar, coffee, cotton, cocoa, rice, tobacco, maize, wheat, mandioc, beans, cassava root, bananas, ipecacuanha, ginger, yams, oranges, figs. Of these the most important are sugar and coffee, which have indeed become the staple productions of the empire. Sugar is mostly produced in the vicinity of Bahia, and coffee, near Rio, but the cultivation is rapidly extending in other provinces. Cotton is grown in the province of Pernambuco, and, in respect of quality, is inferior only to the sea island cotton of North America. The forests furnish almost every variety of useful and ornamental timber, with logwood, and other dye woods, of which the most valuable is the Brazil-wood, which produces a beautiful red colour. The cocoa tree is plentiful on the sandy soil along the coast; and the carrassato or castor-tree, is much cultivated for the sake of the oil which is extracted from its seed. The useful animals, as horses, beeves, and sheep, all introduced from Europe, have increased astonishingly; and hides, tallow, jerked beef, horns, and bones have long formed leading articles of export. Sheep, however, have not increased so rapidly as horses and beeves. Manufactures can hardly be said to exist, and are restricted to the production of the coarsest kinds of cotton cloth, the tanning of leather, and some others of the simplest useful arts. The trade, however, is very extensive, and the commercial system is one of great freedom and liberality. Notwithstanding a convention between Great Britain and Brazil,



no elements at work to effect such a penetration by the State of its soc
trative purposes, the empire is divided into the eighteen provinces of
Santa Catherina, *San Pedro*, *Matto-Grosso*, *Goaz*, *Minas-Geraes*, *Espiri*
Sergipe, *Alagoas*, *Pernambuco*, *Parahyba*, *Rio-Grande*, *Ciara* or *Ceara*, *P*
These are subdivided into comarcas.

San Sebastiao de Rio-de-Janeiro, the capital, usually called simply *Rio*,
bay of the Atlantic, on the south-east coast, in S. lat. 22° 53'. The city
in the European style, and contains about 200,000 inhabitants. The bay
cumference, studded with islands, and opening to the Atlantic by a de
wide, which is formed by two bold projecting headlands, and defended by
of a great trade, much of which is carried on by British merchants. *Cida*
de todos os Santos/ *The City of the Holy Saviour of the Bay of All Saints*/, c
is a fine city, consisting of two towns, one built on the top of a scarped h
the sea, and the other placed below it on the shore of a projecting point of l
entrance of the magnificent Bay of All Saints, one of the finest harbour
dral in the upper town, built of European marble, is considered the fi
generally, with respect to its public buildings, Bahia ranks first among tl
population is variously estimated between 120,000 and 160,000. *The h*
N.-S., by 20 in breadth, and has two entrances separated by the island of
miles wide, is used by large vessels, the other being only two miles wide, an
craft. The country round the bay to the distance of from 12 to 29 miles inl
Reconcavo, and is the most fertile and productive in the comarca. In this d
Cachoeira or *Cax'eira*, which carries on an extensive trade with the inter
16,000. *Cidade do Recife*, commonly called *Pernambuco*, in S. lat. 8° 3', is c
Recife, which is built on a peninsula, and the most commercial place; S
island of the river Capibaribe, joined to Recife by a great stone bridge; and
They are the seat of a great trade, and contain about 60,000 inhabitants.
of rocky hills, is the ancient city of *Olinda*, now much decayed, and conta
The harbour is formed by a *recife* or reef of rocks running parallel to the
heavy sea which continually breaks upon it. *San Paulo*, on the coast so
episcopal city, with 18,000 inhabitants. Its port of *Santos*, on the south
Vicente, has a safe and good harbour, considerable trade, and 8000 inha
ranhao (Maranham), situate on the west side of the island of Maranham,
flourishing commercial town with 28,000 inhabitants. *Para*, a well-built
side of the estuary of the Rio Para, and the place of export for the produ
country drained by that river, has about 20,000 inhabitants. *Victoria*, th
Espiritu-Santo, 21° S. lat., has a good harbour, and 12,000 inhabitants.
Matto-Grosso, has 25,000 inhabitants.

XVII. *GUIANA, GUYANA, or GUAY*

Is the name of that wide region which lies between the Orinoco and
however, than one-half of Guiana is now included within the northern limi
within the limits of Venezuela; and the remainder is divided into thr
Dutch, and *French Guiana*.

British Guiana is the most westerly of the three, and comprises the co
Essequibo, Demerara, and Berbice, to the actual extent of about 12,000 s
claimed is no less than 64,000 square miles of additional territory within th
Spanish Guiana. The smaller and undisputed portion extends along the coa
Essequibo to the Corentyn, about 100 miles. An alluvial flat borders the c
10 to 40 miles, terminating at the foot of a range of sandhills, from 30 to 1
are several ranges and groups of hills, one of which, about 5° N lat., co
crosses the beds of the rivers from west to east, forming large cataracts;

larly during the day. Hurricanes are unknown, and gales unfrequent. Thunder storms occur at the changes of the seasons. The low and swampy coasts are unhealthy, but the interior is more salubrious. The forests abound with trees of immense size, yielding the most valuable timber, with many medicinal plants, dye woods, and woods for cabinetmaking. *Arnotto* grows wild on the banks of the upper Corentyn; and there is another indigenous plant, called the *hai-arry*, a papilionaceous vine, the root of which is powerfully narcotic, and is commonly used by the Indians to poison the water for the purpose of taking fish. The staple vegetable productions are sugar, coffee, and cotton; of which the first is the principal, the two latter being now less extensively cultivated than formerly; and, since 1837, there has been a rapid decrease in the growth and exportation of them all, which may be ascribed, partly at least, if not entirely, to the cessation of slave labour. The total value of the exports amounted in 1836 to £2,135,379; but in 1839, only to £986,013. The government is vested in a governor and a court of policy, which consists, besides the governor himself, of the chief-justice, attorney-general, collector of the customs, the government secretary, and an equal number of unofficial persons elected from the colonists. The revenue is derived from taxes on produce, incomes of 500 dollars and upwards, imports of foreign manufacture, and horses, carriages, wine and spirit licences, &c. In 1836 it amounted to £106,081, and the expenditure, to £113,946. The population is partly Dutch and partly British, most of whom are Protestants of various sects; and in 1838, 11,363 persons were receiving instruction in the public schools. The colony is divided into the three counties of *Essequibo*, *Demerara*, and *Berbice*, and contained, in 1834, 96,581 inhabitants, of whom only 3576 were white. The territory was a Dutch colony acquired by conquest in 1803.

Georgetown, the capital, is situated on the eastern bank of the Demarara river, and contains about 20,000 inhabitants. The streets are wide, and traversed by canals; the houses are of wood, and few are more than two storeys high. Within a mile of the town, near the mouth of the river, is Fort William Frederick, a small mud fort. *New Amsterdam*, on the Berbice, is a small town with 5000 inhabitants, and is reckoned less unhealthy than Georgetown.

DUTCH GUIANA extends along the coast from the river Corentyn, which separates it from Berbice, to the Maroni, which divides it from Cayenne; its length being about 250 miles, and its area, about 38,500 square miles. The aspect of the country, the climate, and natural productions, are much the same as those of the British territory. The principal river is the *Surinam*, which has a course of 300 miles, and gives its name to the northern part of the colony. The Government is vested in a governor-general and a high council. The population, exclusive of Indians and Maroons, is about 65,000, of whom 6000 are white and free coloured people, mostly Dutch, French, and Jews; the remainder consists of negro slaves. The capital is *Paramaribo*, a town with 20,000 inhabitants, neatly laid out in the Dutch style; and situated on the right bank of the Surinam, 18 miles from its mouth, where the river affords excellent anchorage. The fort of *Zeelandia*, a little north of the town, is the residence of the governor, and the seat of most of the government establishments. The inhabitants maintain an active commerce with Holland.

FRENCH GUIANA is the most easterly of the three colonies, and extends along the coast from the river Maroni to the river Oyapok, which forms the boundary of the Brazilian territory, as settled by a convention in 1817. Its length along the coast is about 230 miles, and its breadth 250; comprising an area of 27,560 square miles. The coast is an alluvial tract of great fertility; the high lands are also very fertile; and few countries are more abundantly watered. The coasts are low, and the sea so shallow that, except at the mouth of the river, ships cannot approach the shore. There is only one roadstead, that of Cayenne, where vessels can ride in security. The climate and natural productions are in every respect similar to those of British Guiana, with the addition of pepper, cloves, cinnamon, and nutmegs. The colony is divided into two districts, Cayenne and Sinnamary, and fourteen communes or townships. The government is vested in a governor, assisted by a privy council; and there is besides, the colonial council of sixteen members elected by the colonists; the public revenue amounted in 1837 to £9384, and the expenditure, to £60,279. The population in that year, besides the garrison and colonial functionaries, amounted to 21,648; of whom 5056 were free; the rest being slaves.

Cayenne, the capital, which is situate on the coast of a large island, about 18 miles in length by 11 in breadth, is strongly fortified, and a hill within the enclosure commands the whole town and the anchorage. It is an ill-built and ill paved town, and the greater part of the population are negroes or people of colour.

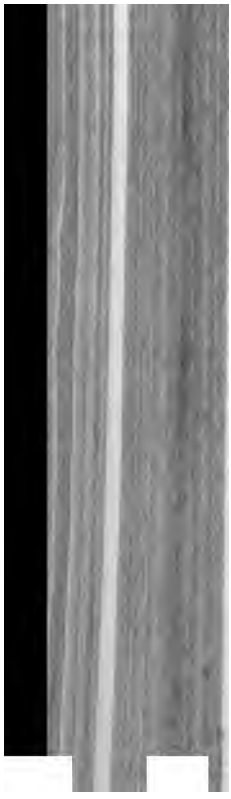
XVIII. *PATAGONIA*

Is an extensive region, forming the southern extremity of the continent, and stretches from the Rio Negro, between 39° and 40° S. lat., to the Strait of Magellan, in 52°, nearly 900 miles. The western part of the country is formed by the southern portion of the Cordillera of the Andes, which there approaches the sea, and forms a number of lofty islands and peninsulas, which line the coast from Chiloe to the Strait. The general elevation of the chain is only about 3000 feet. The character given of this western region is very unfavourable. Wood and water are indeed abundant everywhere; fish are easily caught, and ducks, geese, and other birds are numerous; but of any other useful productions the country is quite destitute. The forests are very dense, and the ground always wet, so that the country is uninhabitable by civilized man; though the climate is mild, and the temperature surprisingly uniform throughout the year. The eastern coast is comparatively low, and the country beyond it is undulating, with extensive pampas covered with grass, but destitute of trees. The soil is dry and sterile, as the westerly winds leave all their moisture on the mountains that line the coast; while easterly winds, which alone bring rain to Eastern Patagonia, are very rare. It is also exposed to severe cold in winter, and excessive heat in summer. Great and sudden changes of temperature take place, when, after very hot weather, cold winds rush northwards with the fury of a hurricane. The indigenous inhabitants are a tall and robust race. They possess no towns, but lead a wandering and unsettled life. (See PEOPLE.)

XIX. *ISLANDS OF AMERICA.*

The ARCTIC ISLANDS of America form a numerous group, between Hudson's Bay and Baffin's Bay; but being entirely barren, and only partially inhabited by a few wandering Esquimaux, we may pass them over without farther notice; though the exploring of them has been the object of many voyages, for the purpose of finding among them a north-west passage to China.

NEWFOUNDLAND is a large island which forms the eastern side of the Gulf of St. Lawrence, between 46° 49′ and 52° 30′ N. lat., being about 300 miles in length, by about 225 in its greatest breadth, and containing an area of 36,000 square English miles. The coast is indented by a number of deep inlets which afford commodious and secure harbours. The interior abounds in large lakes, and is traversed by considerable rivers. The surface, in general, is not heavily timbered; but there is no deficiency of wood. The climate is severe, and the winter long, while the coasts are often visited by cold and dense fogs; the heat of the summer is sometimes oppressive in the day time; but the mornings and evenings are temperate and agreeable. The island is however generally salubrious. The rich pasturages adapt it peculiarly to the rearing of cattle, and good barley and oats might be grown; most of the common



about 20,000 inhabitants.

The *Magdalen Islands*, are a group of small islands in the middle of the north of Prince Edward's Island. *Grand Miquelon*, *Petite Miquel* small islands belonging to France, near the southern coast of Newfoun the French fishers, of whom about 14,000 are employed on the Newfound a long ridge of sand, about 90 miles S.E. of the most easterly point of Ne shipwrecks. It is about 27 miles in length by one or two in breadth, a hillocks 130 feet high. The only vegetation is coarse grass, with some lo the way of vessels sailing to and from the British colonies, and the dem vail, and the extensive shoals which surround the island, make it extr dreaded. An establishment for the relief of shipwrecked mariners is kep

The WEST INDIES comprise five large, and about 40 smaller islands, be called cayos or keys, surrounded by or interspersed with coral reefs and sa between 10° and 28° N. lat., and 59° 30' and 85° W. long., and are generall named the *Lucayos* or *Bahamas*, the *Great Antilles*, and the *Lesser Antill*

The Bahamas comprehend fourteen principal islands, besides innumeral extending in line from the coast of Florida to near Hayti, about 750 miles pal islands are: *New Providence*; *Eleuthera*; *Abaco*; *Great Bahama*; *Gr rador* or *Cat island*, the first land seen by Columbus in his first voyage; *ling's Island*, *Crooked Island*, *Mariquana*, *Great Inague*, and the *Kayques* formation, low, flat, scantily covered with soil, and most of them are unin and agreeable. *Nassau* in New Providence is the seat of government, an

The Great Antilles are *Cuba*; *Haiti* or *Hayti*; *Porto Rico*; and *Jamaica*, a long chain, extending in a curved line from Porto Rico to the Gulf Windward Islands; and of a smaller and more scattered group along the called the Leeward Islands. But English writers give the latter name t the first group, from Dominica to the Virgin Islands, restricting the ap to those between Dominica and Trinidad. Their names are: The *Virgin* *Tortola*, *Virgin-gorda*, *St Thomas*, *St John's*, *Santa Cruz*; *Anguilla*, *St mew*, *St Eustatius*, *St Christopher's* or *St. Kitts*, *Nevis*, *Redonda*, *Montserr deloupe*, *Marigalante*, *Dominica*; *Martinique*, *St. Lucia*, *St. Vincent*, *Ba Grenadines*, *Tobago*, *Trinidad*; and on the coast of Venezuela, *Buenayre* the islands contain isolated peaks or mountain ranges, the summits of w attain a great elevation. St. Lucia, Martinique, Dominica, Guadeloupe, and St. Vincent are volcanic islands, and several of the craters have thrown the middle of last century. The volcanoes of the larger islands seem Caribbean islands are of secondary formation, and are not much raised The elevations of their principal mountains are:

Cuba,	Mount Potrillo,	
"	Sierra de Cobre (Copper Mountains),	
Jamaica,	Blue Mountains,	
Hayti,	Cibao Mountains, Serranal,	
St. Kitts,	Mount Misery,	
Nevis,	Central Peak,	
Dominica,	Highest Peak,	
Martinique,	Mont Pelee,	
St. Vincent,	Morne Garou,	
Guadeloupe,	Soufriere,	
Saint Lucia,	Crater of Volcano,	
Porto Rico,	Sierra de Languilla,	

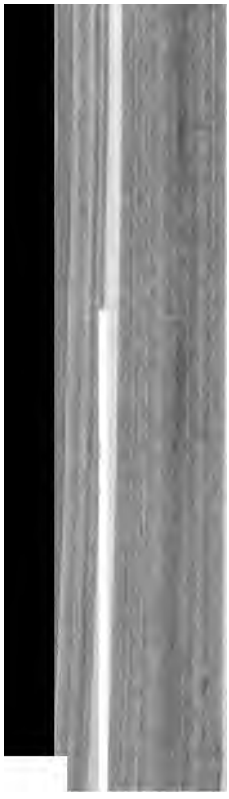
Numerous streams descend from these mountains, which, though they do

temperate regions. The spring may be said to commence in April, when a bright and beautiful verdure, with a rapid and luxuriant vegetation, makes its appearance; and, during May, gentle showers fall almost daily, breaking up with thunder-storms. From May till October, the tropical summer reigns in full vigour; and before the sea-breeze or the trade wind sets in, the heat is scarcely supportable. The sea-breeze begins in the forenoon between 11 and 12 o'clock, and blows with great regularity. The mean height of the thermometer at this season is 80°. The nights are beautiful, and are tempered by a land wind, which, especially in the mountainous islands, blows gently off the shore from about ten o'clock till daylight. With October commence the autumnal rains, when the water pours down in torrents. This continues till December, between which time and April, serene and pleasant weather prevails. From December till March the trade winds blow regularly from the east and north-east, diffusing a refreshing coolness. In March they begin to decline to the south-east, and decrease in strength; but they continue to blow, though with diminished force, till June, when they are often interrupted by calms. In August the hurricane season begins; these winds often do great damage in some of the islands; but they are rare in Cuba, and are never felt in Tobago and Trinidad. They happen most frequently in August, but also occur occasionally in July, September, and October.

The rich and varied productions of the West Indies give them an important place in the commercial world. To their valuable native plants art and industry have added others not less valuable. The sugar-cane, yielding its threefold tribute of sugar, molasses, and rum; the coffee plant, the pimento or all-spice, the plantain and the banana, the pine-apple, the anana, the yam, the sweet potato, maize, cassava, manioc; with cacao, tobacco, cotton, various dyewoods and stuffs, as fustic, logwood, indigo, cochineal; and medicinal plants, as liquorice-root, arrow-root, ginger, jalap, ipecacuanha; mahogany, and lignumvitæ, are among the vegetable productions. To this list must be added the bread-fruit, cocoa-nut, mango, papaw, guava, orange, lemon, tamarind, fig, cashew-nut, mammee, grenadilla, vanilla, pandanus, &c. The cattle are generally of diminutive size; only a few of the islands contain sheep and goats; few horses, asses, or mules are reared, and consequently great numbers of these animals are imported from the continent. Hogs are more abundant than other domestic animals. There are few wild animals, but wild swine, tajassoes, monkeys, rats, and some smaller animals. The manati is found in Trinidad and Tobago. The cayman and various other lizards, and snakes, are common. Fish and turtle are abundant. Parrots, flamingoes, and humming birds are also common. Musquitoes, cockroaches, centipedes, scorpions, ants, and chigos, abound in the islands.

The indigenous population of the islands has long been extinct, except a few hundreds in Trinidad. At the time of their discovery the southern islands were inhabited by the fierce and warlike Caribs; the more northern, by a gentler race, the Arrowauks. At present the population is European and African, partly pure and partly mixed. The negroes of pure race form nearly two-thirds of the whole; the whites are about one-fifth; and the mixed races, one-seventh. The population is diminishing; though in the Spanish islands the loss is continually supplied by importations from Africa. The following table contains the names, extent, and population of the principal islands:—

	Area in Sq. Miles.	*White Population.*	*Free Blacks.*	*Slaves.*	*Total Population.*
I. *British.*					
Anegada,	50	..	..	..	..
Anguilla,	90	365	2,715	..	3,080
Antigua,	108	1,980	33,432	..	35,412
Bahamas,	4,440	4,657	13,916	..	18,573
Barbadoes,	164	14,959	87,956	..	102,912
Barbuda,	72	..	..	..	..
Bleque or Crab,	40	..	..	..	..
Cayman,	60	..	..	..	..
Culebra,	12	..	..	..	..
Dominica,	275	840	17,990	..	18,830
Grenada,	120	801	27,322	..	28,123
Grenadines,	30				
Jamaica,	5,520	30,000	318,844	..	348,844
Montserrat,	47	330	7,329	..	7,659
Nevis,	20	700	10,722	..	11,422
Roatan,	28	..	..	..	..
St. Kitts,	68	1,612	23,660	..	25,272
St. Lucia	275	881	17,267	..	18,148
St. Vincent,	121	1,301	25,821	..	27,122
Tobago,	120	280	14,621	..	14,901
Toriola,	20	477	6,488	..	6,965
Trinidad,	1,970	4,201	41,083	..	45,284
Virgin-gorda,	15	..	..	..	..
II. *Spanish.*					
Cuba,	43,380	311,051	106,494	286,942	704,487
Porto Rico,	3,865	162,311	127,287	34,240	57,086
III. *French.*					
Desirade,	16				
Guadeloupe,	534				
Mariegalante,	60	..	..	95,609	127,668
Saintes,	5				
St. Martin's, N. part,	15				
Martinique,	290	..	..	78,076	116,031
IV. *Dutch.*					
Curaçoa,	375	..	..	..	12,000
St. Eustatius,	10	..	..	..	18,000
Saba,	20				
St. Martin's, S. part,	10	..	..	..	..
V. *Danish.*					
Santa Cruz,	80	2,500	1,200	30,300	34,000
St. John,	70	150	250	2,600	3,000
St. Thomas,	50	900	700	5,500	7,000
VI. *Swedish.*					
St. Bartholomew,	25	..	..	6,000	15,000
VII. *Independent.*					
Hayti,	29,100	..	600,000	..	600,000



principal articles of export are sugar, rum, molasses, coffee, wax, tobacc
leather, cotton, fruits, and mahogany. The principal articles of import
kinds, dried fish and salt provisions, and lumber, chiefly from the United
hardware, and various other manufactured articles, and objects of luxury
ports for the year 1836, amounted to 16,545,908 dollars or £3,369,191 ; a
23,921,251 dollars or £4,784,250. Cuba is under the charge of a Captain-g
military matters extends over all the island ; but for civil affairs, the isla
vinces, the western being under the Captain-general, and the eastern ha
nor only responsible to the Home authorities. The military force consi
and militia. Cuba is also divided into three military districts, whose names

Districts.	*Towns, with their Population*
Western Department, Population 498,535.	Havanna, 112,000 ; Matanzas, 14,000 ; Jarues, 1000 vano, 300 ; Guines, 3000 ; Santiago, 200 ; Mariel,
Central Department, Population 161,497.	Puerto-Principe, 49,000 ; Santa-Clara, 9000 ; Nu 11,000 ; Trinidad, 13,000 ; Remedios, 5000 ; Xag
Eastern Department, Population 131,435.	Santiago de Cuba, 27,000 ; Baracoa, 3000 ; Gibara, guin, 8000 ; Bayamo or San Salvador, 7500 ; Ma

Havanna, the capital, situate on the north shore of the western departi
and most flourishing cities in the New World. Its fine harbour, capabl
ships, is strongly fortified ; and there are besides extensive arsenals and do
generally narrow, crowded, and dirty ; but the recently built suburbs are
of the churches are handsome. It still possesses about two-thirds of the
population in 1827 was 112,000, but has much increased since that time. Th
sidered unhealthy. *Matanzas* also on the north coast, 60 miles E. of H
commercial town ; it has a capacious and safe harbour, and 15,000 inhab
the most thriving towns on the south coast ; its harbour is capacious b
siderable, and its population about 12,500. *Puerto-Principe*, in the interio
of the island, is a poor, and ill-built, but large town, with 30,000 inhabitant
on the north coast, serves as its port. *Santiago* is one of the oldest an
island. Near the western extremity of Cuba, on the south side, is the *Is*
in diameter, a mass of high rocks, forming a bold shore, and rising toward
of more than 3000 feet. The mountains are covered with fine forests, bu
only to about 3000.

PORTO RICO is about 180 miles in length, by 36 in breadth. It is tra
ridge, with rich and beautiful, well watered and well wooded valleys on
stretch fertile alluvial plains, studded with thriving towns. The principal pr
molasses, rum, and tobacco ; the annual value of the exports is about 4,00
the imports, 3,000,000. *San Juan de Porto Rico*, the capital, is a large an
north coast, with a safe, capacious, and strongly fortified harbour, and 30,

HAYTI (formerly *Hispaniola* and *San Domingo*), situate between Cuba a
miles in length, by 150 in breadth. Several ranges of mountains cross th
are rugged and bare ; others being less abrupt, are covered with forests of
other valuable timber. Rich and beautiful valleys are interspersed among
are several extensive and fertile plains, which are watered by numerous r
table productions, and particularly the flora, are extremely rich. The prin
in the west and south, coffee, sugar-cane, and cotton ; in the north, coffee
some tobacco. The amount of the population is not known with any de
mates vary from 360,000 to 1,000,000, but there seems to be no means of ver
one-tenth of the whole are said to be coloured, that is, of mixed descent, the
whites ; but the great bulk are pure negroes. About four-fifths, comprisin
French part of the island, speak a language composed of French and sever

north coast, with 10,000 inhabitants, has a fine harbour, and is fortified; the streets are paved, and the site is agreeable. *San Domingo*, the oldest existing European city in the new world, founded in 1502, was formerly a flourishing town; and its wide, straight streets, its fine cathedral, handsome churches and convents, its hospitals, barracks, arsenal, and neat dwelling houses, still attest its former splendour. It has a good harbour, and a considerable trade; population, 10,000. The west side of Hayti forms a deep bay, in the middle of which is the large island of *Gonave*. Near the west end of the north coast is the small island of *Tortuga*, noted in the history of the Buccaneers.

JAMAICA is the largest and most valuable of the British islands. Its greatest length is about 150 miles, with an average breadth of 40. The Blue mountains, a lofty range, run through the length of the island; sending down upwards of two hundred rivers and streams to water its fertile savannahs and fine valleys. On the coast there are sixteen well sheltered harbours, besides thirty roads and anchorages. The climate has been considered unfavourable to Europeans; but much less so to the negroes. But that it is not naturally injurious to the human constitution, is evident from the long lives and good health enjoyed by both Europeans and negroes who live temperately. Of late years, too, the yellow fever has almost if not quite disappeared. Jamaica presents every indication of being of volcanic origin, but it contains no active volcano. The soil is generally deep and fertile. The chief articles of production and export are sugar, rum, molasses, and pimento, of which last, in 1832, 4,672,827 lbs. were exported. The value of the imports, of late years, has generally averaged £1,600,000 a-year; but great part of them are only sent to Jamaica as an entrepot for subsequent exportation to the Spanish main. Jamaica is divided into three counties: Middlesex, in the centre; Surrey, in the east; and Cornwall, in the west; and these are subdivided into twenty-one parishes. The executive power is vested in a governor appointed by the Crown, with a council of 12 members, who are appointed in the same manner. The legislative power is vested in a House of Assembly of 45 members, 2 for each parish, and 1 for each of the towns of Kingston, Spanishtown, and Port-Royal. The military force consists of about 3000 regular troops, with a white militia of 16,000 or 18,000 men. There is a rector for each parish, under a Lord Bishop, whose see includes also Honduras and the Bahamas. Education is somewhat widely diffused. The public revenue and expenditure amount to about half a million a-year. The governor's salary is £5560 a year; the bishop's, £4000.

Kingston, the principal town, stands on the north side of a fine harbour, in a beautiful plain near the east end of the southern coast of the island. It has an extensive trade, and about 30,000 inhabitants. Two miles N. is *Up-park-Camp*, the only government barracks, about 200 feet above the level of the sea, with comfortable accommodation for 1300 European soldiers. *Santiago de la Vega* (St. James of the valley) or *Spanishtown*, the seat of government, is situated in a fine valley 16 miles west of Kingston, and contains 5000 inhabitants. *Port-Royal*, situate on the tongue of land at the entrance of Kingston harbour, once a splendid and opulent town, has been at several times almost completely destroyed by earthquakes and fires; it still contains the royal dockyard, and is strongly fortified. On the west side of the entrance to this harbour, and on a low neck of land, is the fortress called *Fort Augusta*, a healthy station, with well-ventilated barracks. *Stonyhill Barracks*, capable of containing 500 men, are situate on a mountain ridge, 2000 feet above the level of the sea, 9 miles north of Kingston. *Bleuefields* and *Savanna la Mar*, in the western part of the island, are places of some trade. *Montego-bay*, on the north coast, is a considerable trading town, with 4000 inhabitants. *Falmouth* and *St. Ann* are villages on the same coast. The *Grand-Cayman*, the *Little-Cayman*, and *Cayman-braque*, three small islands to the north-west, are appendages to the government of Jamaica. Grand Cayman is the only one of them which is inhabited.

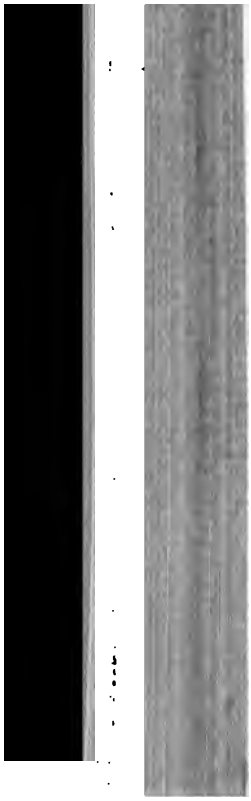
ST. CHRISTOPHER'S or ST. KITTS, is a long island, in shape resembling a guitar. In the interior of the northern part it is rugged and mountainous, its principal summit Mount Misery rising to the elevation of 3712 feet; but along the sea it contains a fine plain of great beauty and fertility. *Basseterre*, the capital, on the south-west coast, contains about 6000 inhabitants. The principal military station is *Brimstone Hill* on the west coast. *Nevis* is a small but beautiful and fertile island, lying close to the southern extremity of St. Kitts, and consists of a single conical mountain rising 3000 feet above the level of the sea, with a border of level land, possessing a very fertile soil, which produces excellent sugar. The only town is Charlestown, a neatly-built place, with a good roadstead. *Anguilla*, or *Snake Island*, is low and level, and contains a valuable salt pond. The Virgin Islands, belonging to Britain, are *Tortola*, *Virgin-gorda* or *Pennistan*, *Anegada* or *Drowned Island*, the last of which is so low, that the sea sometimes breaks over it, and is surrounded by a dangerous reef. Tortola consists of a mountain mass, with a few tracts of flat ground along the shore, and has a town of the same name, on a fine harbour. All these are included in the government of St. Kitts.

ANTIGUA is tolerably level and well cultivated; a range of hills called the Sheckerly mountains, rises in the south and west, to the elevation of 1500 feet; but the only other irregularities of the surface are slight elevations, broken grounds, and a few water courses. The climate is healthy; but the island is subject to great droughts, and is deficient in springs and brooks. It is nevertheless a valuable island, and has a great number of excellent harbours; but, as it is almost surrounded by reefs and shoals, the approach is difficult except on the south-west. *St. John's*, the capital, on the north-west coast, is much admired for the beauty of its situation and its neat appearance. It contains about 16,600 inhabitants, and derives importance from its being the station of the Governor-General of the Leeward Islands. On the south coast is the important naval station of *English Harbour*, containing a royal dockyard. *Montserrat* derives its name from its rugged appearance, and is more noted for its picturesque beauty than for its productiveness. It consists of a mass of rocky hills diversified with valleys. Part of the coast is rendered inaccessible by coral reefs, and there is no harbour. *Plymouth*, a neat little town, is the capital.

DOMINICA is a large and fertile island, though some parts of it are very rugged. The valleys and plains are watered by about thirty rivers and numerous smaller streams. The island is of volcanic origin, and contains several Soufrieres or volcanic vents, which throw out sulphur. Sulphureous and thermal springs are also numerous. High mountains, considered to be the loftiest in the Antilles, occupy the central parts; their slopes are very steep, and terminate in bold and precipitous coasts. The climate is unhealthy. *Rosseau* or *Charlottetown*, the capital, is a well built town, with 4000 inhabitants; but its roadstead is unsafe in the hurricane months. Prince Rupert's Bay, farther north, affords a roomy, deep, and safe harbour.

ST. LUCIA is a mountainous island, the high peaks of which at the south-west extremity, called Pitons by the French, and Sugar-loaves by the English, are visible at some distance, and form striking objects at sea. The range of hills to which the Pitons belong, contains an active volcano, the last eruption of which took place in 1812; but its crater, 4000 feet above the level of the sea, contains hollows filled with boiling water and mud. The soil is fertile, but the climate is moist, variable, and unhealthy. There are several good anchorages; and *Port Castries* or *Carenage*, is one of the best harbours in the West Indies. The town of the same name has a population of about 5000. The population of the island is French.

ST. VINCENT is the most beautiful of the Windward Islands. The mountains are bold and lofty, and the valleys highly productive. In 1812 the Soufriere, which had long been quiescent, threw out ashes and scoriæ, together with a stream of lava. The climate is exceedingly humid; but the island is nevertheless comparatively healthy. *Kingston*, the capital, is a neat town, with 7000 inhabitants. *Calliaqua*, on the south side of the island, is a little village with a fine commodious harbour.



valleys. The coast abounds in fine bays, among which, on its nort
Bay, which is deep, capacious, and secure. *Scarborough*, the capital
TRINIDAD was so called by Columbus, from the double circumstan
that name to the first land he should discover on his third voyage, in
consisting of three mountains, which he considered an emblem of t
of which the name was given. It is separated from the continent
straits, the Dragon's Mouth, 15 miles wide, and the Serpent's Mouth
entrances to the Gulf of Paria, a large and always placid expanse of
anchorage throughout, on a bottom of mud and gravel, and receivin
the branches of the river Orinoco. Trinidad is crossed from east t
with intervening plains or savannahs; but, though extremely fertile a
only to Jamaica, the population is less than that of some of the sma
remarkable for its richness and magnificence; and a pitch lake and
curiosities of the island. The northern, eastern, and southern shor
bours. *Puerto de España* or *Port of Spain*, the capital, is a handso
west coast, and has about 12,000 inhabitants. *Naparima* has also a
bitants.

With the exception of St. Lucia and Trinidad, the one of which is
Spanish, and both governed directly by the colonial secretary, without
lature, each of the larger British West India islands has a governor, ec
The Bahama Islands have one assembly for the whole group; Anguilla
St. Kitts, and there is one council and assembly for the Virgin islands
each a separate council and assembly, but are attached respectively t
and Antigua.

The FRENCH WEST INDIES include the important islands of Martin
smaller dependencies of Desirade or Deseada, Mariegalante, Saintes,
Martin's *Martinique* is a large and fine island lying between St. Luc
rises into lofty volcanic mountains, from which copious streams des
Less than two-fifths of the surface is under cultivation, yet the islan
sugar, cotton, cocoa, and coffee. The capital is *Fort Royal*, a well-bu
with 7000 inhabitants; but the most important commercial town is
tion of 18,000. Its excellent roadstead has rendered it the entrepot of
part of the world. *Guadeloupe* consists of two islands, separated by a
named *Grande-terre*, is low and comparatively arid; the western, nam
lofty heights, at the base of which are fruitful and well-watered plai
with a population of 9000, is the capital; but its roadstead is unsheltere
side of Grande-terre, has a good harbour, and carries on almost all the
lation amounts to 15,000. The smaller islands are of little importa
Saintes consist of a little cluster of rocks which enclose a very safe ha
The Dutch islands are St. Eustatius and Saba, to the north of St. K
and Oruba, on the coast of Venezuela. *Curaçoa*, the largest, is arid an
important on account of its contraband trade with the Spanish colon
has a fine harbour, with some trade, and about 8000 inhabitants. *Saba* con
is highly cultivated, and its town of the same name, with 600 inhabit
smuggling trade. *St. Martin's* belongs partly to France and partly to
The DANISH ISLANDS of *Santa Cruz*, *St. Thomas*, and *St. John*, belo
Isles; but only Santa Cruz is of much importance. Its surface is a pla
lations; and the soil is good and well cultivated. Sugar is the staple
some fine fruits, cotton, and provisions. Its capital, *Christianstadt*, has
the population of St. Thomas is contained in its capital, of the same
smuggling station.

St. Barthelomew, to the north of St. Kitts, is the only Swedish p
Gustavia, the capital, acquired some importance during the last continen

best kind, and produce peaches, oranges, grapes, melons, and figs, besides the ordinary tropical fruits. They were discovered in 1522, by Juan Bermudez, a Spaniard, from whom their common name is derived. In 1609, Sir George Somers, on his voyage to Virginia, was wrecked on them, from which circumstance they obtained their other but less usual name.

Off the coast of Brazil are the *Abrolhos*, a cluster of islets and banks, between 17° and 18° S. lat. The islands are low, and are covered with grass and a little scattered brushwood. They consist of gneiss and sandstone in horizontal strata, and their highest point rises about 100 feet above the level of the sea. *Fernando Noronha* is a small island used as a penal settlement by the Brazilian government, in S. lat. 3° 52′, and W. long. 32° 25′. *Martin Vas* is a group of very small islands; and *Trinidade* is a larger island, between 32° and 35° W. long., and about 20° 30′ S. lat. *St. Catherine's* is a considerable island close to the coast, between 27° and 28° S. lat., forming, inside, a good harbour and anchorage.

The FALKLAND ISLANDS, a group in the South Atlantic, occupied by Great Britain, but claimed by Buenos-Ayres. There are said to be so many as 200 islands; but only two of them are of considerable size. They are situate between 51° and 52° 45′ S. lat., and 57° 20′ and 61° 46′ W. long., about 250 miles N.E. of Tierra del Fuego. The islands are all of very irregular shape, and much indented with bays and inlets, and contain many excellent harbours. Between the two large islands is Falkland Sound, from 7 to 12 miles in width, and navigable for ships of any class. The shores are for the most part low; but in the western part of the group, there are many high precipitous cliffs, and ridges of rocky hills, about 1000 feet above the level of the sea. The highest hills, which are in the eastern large island, rise about 1700 feet. The climate is variable, though not quite so much so as that of England, and is said to be quite as healthy. Snow seldom lies long, and the frosts are slight; but the winds are violent and excessive. A small British garrison is stationed at *Port Louis*, at the head of Berkeley Sound, towards the north-east extremity of the eastern island. There are also a few Buenos-Ayreans and Europeans; and the islands are frequented by numbers of Americans, English, and French whalers and sealers.

TIERRA DEL FUEGO (Land of Fire) was the name given by the early Spanish navigators to the country which forms the southern side of the Strait of Magellan. Its coasts have been recently surveyed, and it has been found to consist of seven large, and many smaller islands and rocks, separated by channels of various widths. *Cape Horn*, the most southerly of the group, is a small island, rising 1870 feet above the level of the sea, in S. lat. 55° 58′ 40″, and W. long. 67° 16′; and the eastern extremity is *Staten Island*, which forms the eastern side of the celebrated *Strait of Le Maire*. The southern and western parts of the tierra may be briefly described by saying, that deep but narrow arms of the sea intersect high mountainous islands, whose summits are covered with snow, while their steep and rocky shores are more than partially covered with evergreen wood. In the eastern portion the wooded mountains of the west sink into hills, and these again into level land, which is partially wooded. Throughout the year, cloudy weather, rain, and much wind prevail; fine days are rare; frost and snow are constant on the mountains: but near the level of the sea, neither the frost nor the snow is so severe as might be expected in so high a southern latitude, and in the vicinity of snow-covered mountains. The climate of the eastern portion is somewhat milder than that of the western. The country is thinly inhabited by the wretched Pecheres.

Along the west coast of Patagonia are innumerable islands and peninsulas, all much of the same character as the worst parts of Tierra del Fuego, forming the upper parts of a great range of mountains, whose bases are sunk in the ocean. They are barren to seaward, but impenetrably wooded towards the mainland; and are always drenched by incessant rain, which is never dried up by evaporation. Clouds, winds, and rain only cease during the very few days on which the wind is easterly or perhaps southerly. But the climate is mild, and the temperature is surprisingly uniform throughout the year. The principal of these islands are *Wellington*, *Cambridge*, *Adelaide*, *Hanover*, *Rennel*, *Piazzi*, *Chatham*, *Madre de Dios* (God's Mother;) with the peninsulas of *Taytao* and *Tresmontes*.

Chiloe is a large island, forming the most southern province of Chili, and the last inhabited part of the west coast of South America. It is about 120 miles in length by 40 in breadth; population of it and 36 adjacent islands, about 50,000. The island is mountainous and covered with wood; and the climate is healthy but damp. It feeds great herds of sheep, hogs, cattle, horses, and other animals; and the principal articles of export are planks, hams, brooms, hides, woollen cloths, &c., to the value of 25,000 dollars a-year. The chief towns are *San Carlos*, which is fortified, and has a population of 2000; *Castro*, and *Maulin*. To the southward extends the long *Chonos Archipelago*, the physical character of which is little better than that of the South Patagonian Islands. It is almost uninhabitable. Indeed, to the south of Chiloe there are very few acres of land capable of cultivation, and no place which is fit for the permanent abode of civilized man.

Mocha, a small island off the coast of Chili, in south lat. 38° 19′, is high, with deep water round it, but straggling and dangerous rocks lie near it towards the south-west. A few Chilenos live on it for the sake of catching seals on the rocks.

The ISLANDS OF JUAN FERNANDES, discovered by a Spaniard of that name in 1563, consist of two principal and several smaller islands in the Pacific Ocean, 400 miles W. of the coast of Chili, in 33° 40′ S. lat. The larger island named *Mas-a-tierra* (nearest land), is from 10 to 12 miles long and 6 broad, elevated in the north; less lofty, but rocky and barren in the south. The fig and the vine flourish on the hill sides; and, among the larger trees, are the sandal, cork, and a species of palm called chuta, which bears a rich fruit. Goats are found in a wild state in the interior; seals, walrusses, and crustacea, on the coasts. The island has been taken on lease from the Chilian government by an American, who has brought to it about 150 families of Tahitians, with the intention of cultivating it, so as to make it become the resort of whalers and other vessels navigating the Pacific. Off its south-west point is the small island of *Santa Clara* or *Goat Island*. The smaller island, named *Mas-a-fuera* (farthest out), is a lofty volcanic rock, 90 miles farther west. The highest mountain of Mas-a-tierra is 3000 feet, and the summit of Mas-a-fuera is 2300 feet, above the level of the sea.

The *Isles of St. Felix* are a small group, between 25° and 26° S. lat., and 79° and 81° W. long.

The GALAPAGOS are a group of volcanic islands, situate under the equator, between 89° and 92° W. long. They are all of comparatively recent formation; and the lava is very hard, so that vegetation makes small progress. On five islands there are fertile spots, at one of which, on Charles's Island, a small colony has been established by the government of Guayaquil. There are six principal and seven smaller islands, besides many islets and rocks. The largest is 60 miles in length, and 15 broad; and its summit rises 4000 feet above the level of the sea. At first landing on their shores, dismal looking heaps of broken lava everywhere meet the eye, with innumerable crabs, hideous iguanas, and great elephant tortoises. The two latter species of animals are peculiar to the islands; and, indeed, it is from the last that the group derives its name of *Islas de las Galapagos* or Islands of Land Turtles.

The *Isles of Revillagigedo*, between 18° and 20° N. lat. and 109° and 115° W. long., west by south of Cape Corrientes in Mexico, are four in number, named *San Benedicto*, *Del Socorro*, *Rocca-partida*, and *Santa Rosa*. They are almost in the same line of latitude with the volcanoes of Colima, Jorullo, Popocatepetl, and Orizaba; and pumice stones are found among them, proving them to be of volcanic origin. To the north-west is a small island named *Shelvock's*, about 200 miles south-west of Cape St. Lucas in California. *Clipperton's Island*, and *Gallego*, are two small islands between those of Revillagigedo and the Galapagos; the former in 10° 20′ N. lat., and the latter in 1° 40′ N.

Nootka, named also *Quadra* and *Vancouver's Island*, is a large island close on the coast of North America, to the north of the Columbia river, and crossed by the 50° N. lat. It is separated from the mainland by Queen Charlotte's Sound, and the Strait of Juan de Fuca. It contains about 30,000 square miles; is rocky and elevated, but no part of it attains any great height. The coast farther north is lined by a number of large islands, bearing the inappropriate names of *Queen Charlotte's*, *Prince of Wales's*, and such like.

THE ARCTIC POLAR REGIONS.

North America and the islands connected with it may be considered as terminating at Lancaster Sound, which extends about 500 miles westward, and forms a wide separation between them and the regions which constitute the northern and eastern sides of Baffin's Bay. The country immediately adjoining Lancaster Sound, seems to consist of a number of large islands or peninsulas, separated by wide straits; but towards Baffin's Bay there seems to be a continuous mass of land, extending northward to Sir Thomas Smith's Sound, which forms the north-western limit of Greenland. This land has been called *North Devon*, and the islands to the westward, *Parry's Islands*; the most westerly of them yet known being *Melville Island*, where Captain Parry wintered in 1819-20. The shores consist of steep rocks, while the interior is occupied by mountains always covered with snow. North Devon seems to be uninhabited; but Parry's Islands contain a few families of Esquimaux.

GREENLAND appears to form one continuous mass of land, extending along the eastern side of Baffin's Bay, from Cape Farewell, in 60° N. lat., to Smith's Sound, in 78°, more than 1260 miles; and expanding in width from Cape Farewell to the most northerly part known, where the breadth exceeds 600 miles. It is a barren mountainous country, nearly the whole surface of which is covered with perpetual ice and snow; which in many parts form glaciers extending to the very shores, where they appear as icy cliffs, several hundred feet high. The eastern coast generally rises in high masses of rock or ice, close to the shore, and is beset during the whole year with enormous masses of ice, which render the vegetation exceedingly scanty, and the fishing very precarious. Accordingly, only a few Esquimaux inhabit it. The western shores are high, rugged, and barren, but are indented by deep inlets, some of which penetrate 100 miles, and on the sheltered low grounds along their banks there is some vegetation; the sea being less encumbered with ice than on the east coast, the inhabitants are able to prosecute, for a considerable period during summer, the fisheries, on the produce of which they subsist. The climate is also less severe, though the ground does not begin to thaw till the end of June; but in July the thermometer rises to 92°. The atmosphere is pure, light, and healthy; but in winter the cold is sometimes very intense. The vegetation in the northern districts consists of lichens and mosses; but, farther south, there are a few annual plants, and some berry-bearing shrubs. In well-sheltered valleys birch and mountain-ash grow to the height of a man, with a stem three or four inches thick. Potatoes, and a few other culinary vegetables, are raised; and a few sheep are kept by the European settlers. Rein-deer, hares, foxes, and white bears, are the only wild animals; and the only domestic animal possessed by the natives is the dog, which they use for drawing sledges. Sea-fowl and fish, especially cod and caplin, are plentiful; but seals supply the most essential wants of the natives, with their fur, skins, and oil. The inhabitants are Esquimaux, who live on the west coast, as far north as 77° N. lat. and on the east coast to 76°. Their principal occupations are fishing and seal-hunting; they are under the dominion of Denmark, forming 13 colonies, with 15 minor commercial and 10 missionary establishments; the most northern station is *Upernavic* in N. lat. 72° 30'. Many of the people have embraced Christianity, and are becoming somewhat civilised; though the circumstances in which they are placed must ever operate as a bar to their great improvement. The trade between Greenland and Denmark employs five or six vessels. The exports consist chiefly of whale oil, seal, bear, and rein-deer skins, eider down, &c. Coffee, tobacco, snuff, and brandy, are the principal articles of import. The total population is estimated at between 6000 and 7000 Esquimaux, and 150 Danes or other Europeans.

BAFFIN'S BAY, and DAVIS' STRAIT, which divide Greenland from America, extend in the direction of N. by W. from the North Atlantic Ocean, for 1300 miles, with a breadth varying from 160, at the narrowest part of Davis' Strait, under the Arctic Circle, to about 900 miles, opposite Lancaster Sound. This great sea is navigable only in June, July, August, and September; navigation during the rest of the year being rendered impossible by icebergs. It is of great but variable depth, with a muddy bottom. There are strong currents which set towards the south in Davis' Strait, but in the upper part of the bay they seem to run north. Indeed, it is said that a strong current sets in from the ocean round Cape Farewell, and continues along the eastern coast to N. lat. 67°, where it crosses over to Cape Walsingham, and thence flows southward along the western shores of the bay, and those of Labrador and Newfoundland. The black whale is very abundant in these seas, on which account they are visited every summer by a great number of whaling vessels, which, since Captain Parry showed them the way, even cross the Bay and penetrate Lancaster Sound. Davis' Strait was discovered by John Davis in 1596; Baffin's Bay, by Robert Bylot and William Baffin in 1616; but it was not till the summer of 1818 that they were again followed in their track round the bay. These seas are remarkably free from islands and rocks. The largest is *Disco Island*, on the east coast, in 70° N. lat.; and *Hare* or *Waygatt Isle*, a little farther north, has acquired some celebrity, as the place where experiments have been made with the pendulum to ascertain the figure of the Earth.

The SPITZBERGEN (Peaked Mountains) are a group of four large and many smaller islands in the Arctic Ocean, to the eastward of Greenland, between N. lat 76° and 81°, and 7° and 27° E. long. Their shores are no where flat; but, on the contrary, in every direction, consist of conical mountains which rise abruptly from the sea to an elevation of between 1500 and 3700 feet, being separated by narrow valleys, which generally open to the sea, and are all occupied by glaciers. In summer, streams of water flow from some of them, and form cascades; but, in general, the glaciers are covered with snow all the year. Not a plant deserving the name of tree or shrub enlivens the desolate scene; and of the 47 species of plants which the country produces, most are mosses and lichens. The arctic fox is the most common quadruped; but there are also white bears, rein-deer, and numerous sea-fowl. The surrounding seas teem with life; with whales, seals, walrusses, cod, ling, herring, torsk, and skate; but the most abundant marine animals are of the molluscous and crustaceous classes. The climate is intensely cold; but the atmosphere is pure and dry, and so serene and refractive, that objects are clearly seen through it at vast distances. The dominion is claimed by Russia, and a few Russian hunters continue on the islands, even during winter, to pursue the seal and the walrus. To the southwest of Spitzbergen, nearer the coast of Greenland, is the rocky island of *Jan Mayen*, which rises to an elevation of 7000 feet above the level of the sea, and contains an active volcano.

OCEANICA OR OCEANIA.

THIS name has been employed by the French geographers, and adopted by those of other nations, to include the innumerable islands scattered over the great ocean which extends from the south-eastern shores of Asia to the western coast of America. From Asia, Oceania is separated by the Gulf of Martaban, the Strait of Malacca, the Chinese Sea, the Channel of Formosa, and the sea to the south and east of Japan; and from America, by the wide expanse of ocean, which is free of islands, between the western shores of that continent, and the most easterly parts of Polynesia. Oceania may be divided into three distinct portions, which we shall treat of separately, under the names of *Malaysia* or *Malaisia*; *Australasia*; and *Polynesia*.

I. MALAYSIA.

GENERAL DESCRIPTION.—Malaysia includes the numerous islands immediately adjoining the south-eastern coasts of Asia, to which they have been hitherto usually considered as an appendage, under the name of the *Indian Archipelago*. The group has been named *Malaysia* from the circumstance, that almost without exception people of the Malay race possess the coasts, at least of all the large islands, and are, indeed, the dominant race of the Archipelago. It is situate between 12° 40′ S., and 20° N. lat., and 92° and 134° E. long. The Archipelago is arranged into groups and chains of islands, which, being thickly strewed, form numerous straits and passages, the intricacy of which would render the navigation dangerous, were not the seas distinguished beyond all others, by the proximity of large tracts of land, by their pacific character, and by the uniformity of the prevailing winds and currents. The whole of Malaysia is situate within the tropics. There is accordingly a great uniformity of climate, of animal and vegetable productions, and in the character of its inhabitants. It possesses the common characteristics of other tropical countries; heat, moisture, and luxuriant vegetation. The islands are throughout of a mountainous nature, and the Archipelago is traversed by several great lines of volcanic action. From Luzon, where there are three active volcanoes, one line extends through Mindanao, Sanguir, the north-eastern extremity of Celebes, Gilolo, and the Moluccas, where it is met by two other great volcanic lines, the one of which extends east and west from Barren Island in the Gulf of Martaban, through Sumatra, Java, Bali, Lombok, Sumbawa, Sandelwood, and others, and the other stretches through Borneo, Celebes, Banda, with New Guinea, New Britain, New Ireland, and various other islands of Polynesia. The islands contain few plains, and no arid deserts. Where not cultivated, they are generally covered with forests of stupendous trees. They are distinguished from every other group of islands in the world, by the presence of periodical winds; and from all countries whatever by the peculiar character of these. If not the most extensive, Malaysia is at least the most widely spread region, and the region of the most curious and various productions in the immediate neighbourhood of the equator. The insularity of the region, the contiguity of the islands, and the facility and rapidity of the navigation, are also prominent and characteristic features. The animal and vegetable productions either differ wholly from those of other countries, or consist of important varieties of them; and the productions of the intervening seas are not less remarkable for their abundance and variety than those of the land.

There is, however, much diversity in the physical character of the islands and their inhabitants: the whole are capable of being classed under five natural divisions. Beginning from the west, the first division comprehends Sumatra, Java, Bali, Lombok, and about two-thirds of the western portion of Borneo, as far as 116° E. long. The animal and vegetable productions of this division are peculiar, and have a higher character of utility than those of the other divisions; the soil is more fertile, and better suited for rearing vegetable food of the highest quality. The civilized inhabitants have a general similarity in manners, language, and political institutions; they

are much more civilized than those of the other divisions, and have made consider progress in arts, arms, and letters. Rice is their principal food, and is gener abundant. Celebes is the centre of the second grand division, which compreher besides that great island, the smaller islands on its coast, as Boutong and Salaye whole chain of islands from 116° to 124° E. long., with the east coast of Borneo to 3° N. lat. The animal and vegetable productions have generally a peculiar cha ter; the soil is less fertile than that of the first division, and less adapted for pro cing rice or other grain of the first quality. The civilized inhabitants have m considerable progress in the useful arts, but their civilization is of an inferior kin that of the first division. In language, manners, and political institutions, there surprising similarity among them, but they differ widely from their western neighbo Rice is their principal food, but is not abundant, and sago is occasionally used. T third division, which extends from 124° to 130° E. long., and from S. lat. 10° to lat. 2°, differs remarkably from all the rest. The character of the monsoons is h reversed. The eastern monsoon, which is dry and moderate to the west, is here ra and boisterous; the western monsoon, which is rough and wet in the first two divisio is here dry and temperate. The greater number of the plants and animals of the first t divisions disappear in the third, which possesses remarkable productions of its ow unknown in any other part of the world. This is the native country of the clove a the nutmeg, and the only region that produces them in perfection. For raising t higher kinds of vegetable food the soil is less suited. Rice is scarcely produced all, and the staple food of the people is sago. In language, manners, and institution the people agree among themselves, but differ essentially from their neighbour They are far inferior in knowledge, skill, and civilization, to the people of the fir two divisions; and have never acquired the use of letters. The fourth division the least distinctly characterized; but it is nevertheless marked by points of dissimil tude sufficiently striking to entitle it to be considered separately. It extends fro 116° to 128° E. long. and from 4° to 10° N. lat., including the north-eastern coas of Borneo, the large island of Mindanao, and the Sooloo archipelago. The clove an the nutmeg are indigenous, but of inferior quality; sago is much used, but rice is th principal food of the inhabitants. In civilization the people are superior to those o the third division, but inferior to those of the first and second. Their language, man ners, and institutions are peculiar, agreeing with each other, but differing from thos of all their neighbours. The fifth division is the well known group of the Philippine which extend from 10° to 15° N. lat. A geographical position so different from tha of all the other countries of Malaysia occasions much difference of climate and natura productions. It is the only portion of Malaysia within the region of hurricanes, an this circumstance alone gives a peculiar character to the country. The soil is of ex nent fertility. It is particularly favourable to the growth of tobacco and the sugar cane, but does not produce the pepper of the first division, the spices of the third nor the delicate and peculiar fruits which characterize the islands within 10° of th equator, and are unknown to all other regions of the earth. The manners, cus toms, and institutions, and, above all, the language of the people, differ from thos of the inhabitants of all the other divisions. Rice is the food of the more civiliz races.

PEOPLE.—These distinctive features have necessarily produced the most extensiv influence on the character and civilization of the inhabitants. The most abject race only, those secluded from the sea, are hunters; there are no pastoral tribes; and a migrations are made by water. Their boats and canoes are to the Malays what the horse and the camel are to the Tartars and the Arabs; the people are by necessity navigators and fishermen, and from this condition the progress of civilization among them is to be traced. Predatory warfare is the only kind suited to their genius.

The inhabitants consist of two perfectly distinct races; the one fair or brown coloured, with lank hair; the other black or sooty coloured, with woolly or frizzle hair. The brown coloured tribes agree so remarkably in appearance with each other, that one general description will suffice for all; and the varieties may gene rally be considered as objects of curious rather than of useful distinction. The persons are short, squat, and robust. Their medium height may be reckoned, fo the men, about five feet two inches, and for the women, about three inches less Their complexion is generally brown, but varies a little in different tribes; neithe the climate nor the habits of the people seem to have any effect upon it. The fairer races are generally towards the west, and some of them, as the Battas of Sumatra, ar under the very equator. The Javanese, who live the most comfortably, are among

the darkest people of this race; while the wretched Dayaks or cannibals of Borneo, are among the fairest. The hair of the head is long, lank, harsh, and always black; on every other part of the body the hair is scanty; the beard in particular is very defective. The Mahometan priests among them are fond of wearing beards, but the utmost they can obtain by great care and assiduous culture, is a few straggling hairs, which only serve to make them ridiculous. The rest of the community pluck out what no pains would render respectable. Compared with Europeans, Arabs, Persians, Tartars, Burmans, and Siamese, they may be considered as an ill-looking race. They most resemble in person and complexion the people of Siam and Ava; but nevertheless differ essentially from these, and are, in short, a distinct race, maintaining among themselves a remarkable congruity, but are, at the same time, very unlike any other people. Their standard of perfection in colour is virgin gold; but their complexion is scarcely ever clear, and a blush is hardly at any time discernible in it. This circumstance, however, distinguishes them from Europeans more than from Asiatics.

The Pua-puas, Papuas, or woolly-haired race, resemble dwarfish African negroes. Mr. Crawford says that he never saw any of them whose stature exceeded five feet, and he has seen full-grown men of only four feet nine inches. Besides their short stature they have spare and puny frames; and their complexion is of a sooty colour. Sir Everard Home draws the following distinction between them and Africans:—"The skin (of the Pua-pua) is of a lighter colour; the woolly hair grows in small tufts, and each hair has a spiral twist. The forehead rises higher, and the hind head is not so much cut off. The nose projects more from the face. The upper lip is longer and more prominent. The lower lip projects forward from the lower jaw to such an extent that the chin forms no part of the face, the lower part of which is formed by the mouth. The buttocks are so much lower than in the African negro as to form a striking mark of distinction; but the calf of the leg is as high as in the African. It is only, indeed, in the mere exterior stamp that the puny negro of Malaysia bears any resemblance to the African, who, in vigour of frame, and capacity for endurance, is superior to all the Asiatic and American races. The Pua-puas are evidently a distinct variety of the human species, and a very inferior one. Their puny stature and feeble frames cannot be ascribed to the poverty of their food, or the hardships of their condition; for the brown races, who live under circumstances equally precarious, have vigorous constitutions. Some islands, indeed, they enjoy almost exclusively to themselves, yet they have in no instance risen above the most abject state of barbarism. Whenever they come in contact with the fair race, they are hunted down like wild beasts, and driven to the natural fastnesses of the mountains. Those of them, however, who inhabit New Guinea and the islands to the eastward, though hideous in appearance, are said to be robust men of a shining black complexion."

The question of the first origin of both of these races appears to Mr. Crawford to be one far beyond the compass of human reason. "By very superficial observers," he says, "the one has been supposed a colony from Africa, and the other an emigration from Tartary. Either hypothesis is too absurd to bear the slightest touch of examination. Not to say that each race is radically distinct from the stock from which it is imagined to have proceeded; the physical state of the globe, the nature of man, and all that we know of his history, must be overturned to render these violent suppositions possible."—(*Hist. Ind. Archipelago*, I. 27.)

Such was the result of Mr. Crawford's inquiries; but later and more minute researches have established the existence of a third race of Malaysians, as black as the Papuas, or nearly so, but with straight or lank hair, and different features, sometimes resembling those of the Hindoos. They seem, however, generally to be of the same lineage and physical character as the Australians, and to be the aborigines, or oldest known inhabitants of the larger islands. They are every where extremely barbarous; and, where not reduced to slavery, the different tribes retain a general similarity in their habits of life. They are termed *Alfourous*, *Arafuras*, *Araforas*, or *Haraforas*, and speak a great variety of languages. They are found in New Guinea, the Moluccas, Celebes, and the Philippines; the barbarous people of the interior of Borneo belong, in part at least, to the same race; and the savages of the interior of Sumatra are probably a tribe of the same description.

For a people below the middle size of Europeans, and living almost solely on vegetable food, the brown Malaysians are strong and athletic; not agile and active, but persevering. They are uncleanly in their habits and persons, but temperate and even abstemious in their diet. They may be considered industrious or indolent in proportion to their degree of civilization or barbarity. Wherever they enjoy tran-

quillity and security they are found to be industrious like other people in the sa circumstances. Their frames are suited to the climate they live in; they have constitutional listlessness or apathy; and, whenever they have a reasonable pr spect of advantage, they labour with vigour and perseverance. But, as civilizati among even the most improved is but in an early stage, and even their best forms government are wretched, and confer little security of person or property, their ch racter feels the influence, and they may all be pronounced an indolent race, many them approaching to listlessness and apathy. They are gifted with a large portion fortitude, but their courage consists rather in suffering with patience, than in brav danger. With respect to their intellectual faculties, they may be pronounced sl of comprehension, but of sound, though contracted judgment. In quickness, acutene and comprehensiveness of understanding, they come far short of the civilized nations Europe, and in subtlety they are not less inferior to the Hindoos and the Chine Their weakness of reason and pruriancy of imagination make them wonderfully cr dulous and superstitious. But though their faculties are feeble, they are not perverte by false impressions, nor distorted and diseased by the influence of false refinement a erroneous education, like those of most of the Asiatic nations; while they posse an abundant share of laudable curiosity, with an anxious desire for knowledge. Th are also honourably distinguished from the Asiatics by a regard for truth; they ha no capacity for intrigue, and have never been known at any time to pursue those de terous expedients, and cunning practices, in which the whole lives of some Asiati are so frequently spent. They are capable of attachment, gratitude, and fidelity; a grave, reserved, cautious, courteous, and obsequious; but neither litigious, avaricio nor rapacious, though sufficiently tenacious of their rights. They are not cruel a unfeeling; in their legal punishments there are no symptoms of refined cruelty, th origin of which can be traced to their own manners; they are good-humoured and che ful to a remarkable degree, and very slightly irascible; and hospitality is almost unive sally practised. But, on the other hand, the absence of public security, and of a regul administration of justice, leaves in a great measure in the hands of private persons th power of avenging injuries; and, accordingly, every man has arms in his hands. Th point of honour is, in consequence, often as much observed by the peasant of Malaysi as by French or English gentlemen. In their demeanour there is a large share of natur politeness; among the more scrupulous, a contemptuous or haughty manner, still les an abusive expression, or a blow, will not be tolerated for a moment; the kris is ever hand ready to avenge the insult. Every man knows this, and the consequence is guarded demeanour and a universal politeness. All the tribes of the Archipela pride themselves in this, and never suffer an indignity even to a stranger who coul not defend himself. They are neither bigoted nor intolerant, with respect to any cla of opinions or practices, whether civil or religious. They bear no rancour towar strangers, but readily tolerate their peculiar manners, customs, and forms of religio They are, however, simple, credulous, and superstitious; it would require a volum says Mr. Crawford, to describe all the forms under which these weaknesses are di played. They believe in dreams, omens, lucky and unlucky days, casting of nativitie supernatural endowments, invulnerability, sorcery, enchantments, charms, filtre and relics. There is not a forest, a mountain, a rock, or a cave, that is not suppose to be the habitation of some invisible being; and, not content with their own stoc of these, their comprehensive faith has admitted the deities of Western India, Arab and Persia. These superstitions are generally harmless; though, at times, their de lusions operate in the most formidable manner. But over all their good qualities an weaknesses, revenge, the vice of all barbarians, is predominant. They can hardl forgive an injury, and are capable of harbouring the longest and most deeply-roote resentment; and in seeking to gratify this feeling, they sometimes break out into tho fits of furious madness, which have become proverbial under the name of amo where the madman assails all who come in his way till he is himself cut down. An ther vice, incident to their state of society, is a disregard for human life. They li in a state of turbulence and anarchy; the power of the law is scarcely felt; death familiar to them; and the great body of them are in such a state of degradation, th life is neither valued nor valuable; every man's life has its price, and that not a ve high one; murders and assassinations are common. In their social and domest state, thefts and robberies are extremely frequent; but these crimes are general perpetrated only by the meanest and most abandoned of the people; and even th common peasantry are remarkable, more generally for honesty and fidelity than f the opposite vices. But, in their intercourse with strangers and enemies, the treache of the Malaysian character is fully displayed. Of all the people of the East, wi

whom Europeans have had an extensive commercial intercourse, the Malaysians are by far the most uncivilized and barbarous. The singular value of the productions of their country, and its peculiar convenience for trade, have occasioned an extent of intercourse scarcely compatible with their state of civilization; the results of which are those acts of piracy and other lawless attacks on the property of strangers, which are insiduously perpetrated in accordance with the aggressive spirit of all people in such a state of society. Among a hundred nations of independent barbarians, the plunder of the stranger and the traveller are no more looked upon as crimes, than among the Arabs; while, on the other hand, as among the latter people, the same stranger, if destitute and forlorn, would find an hospitable reception.

Marriage is universally observed; and the lot of the women may, on the whole, be considered as more fortunate than in any other country of the East. They are, in general, not immured at all; and when they are secluded, the seclusion is but partial, and is free from that jealous restraint which has become proverbial with Asiatic manners. The husband invariably pays a price for his wife; but nevertheless women are not treated with contempt or disdain. They eat with the men, and associate with them in all respects on such terms of equality as are surprising in that state of society; and this equality is most thoroughly recognised among the most warlike tribes; women are frequently raised to the throne, and the practice is most frequent where the society is most turbulent. Polygamy and concubinage are tolerated; but may be looked upon rather as a vicious luxury of the great, than as a general practice. With respect to female purity there is the greatest difference of manners and opinions among them, some of the tribes being very lax, while others are the reverse; though jealousy cannot be said to be a vice belonging to any of them.

With respect to the amount of the population of Malaysia there are no data upon which any estimate can be formed. M. Balbi has arranged the Malaysians according to their languages, as in the following table:—

The JAVANESE, who seem to be the most numerous, as they form two-thirds of the population of Java, may be regarded as the most polished people of Oceania, while their literature is the richest and most important. They have been at three different epochs the preponderant nation of Malaysia: the first of which was towards the second half of the fourteenth century, when the empire of Majiapahit embraced almost the whole of Java, the kingdom of Palembang in Sumatra, the island of Bali, and the petty states in the southern part of Borneo; the second, in the first half of the fifteenth century, when their dominion extended not only over all Java, but also over Sabrang, Goa, Macassar, and others in Celebes, Banda, Sumbawa, Ende, Timor, Sooloo, Ceram, a part of Borneo, and Palembang in Sumatra; and the third, in the first half of the seventeenth century, when the empire of Mataram nearly equalled that of Majiapahit. The intellectual character of the Javanese ranks lower than that of almost any other people who have made equal progress in external circumstances, and their literature, like their religion, is almost entirely derived from Southern Asia, and exists in a very low and precarious state.

The *Mountaineers* of Bantam, Batavia, Buitenzoorg, Preangan, and Cheribon, occupy a large portion of that part of Java named *Sunda* by the natives.

The *Islanders of Bali* are among the most polished people of Oceania, although without an indigenous literature. Their religion and institutions are a faithful representation of those which formerly prevailed over all Malaysia, and particularly at the court of Majiapahit.

The *Malays* occupy the late empire of Menangcaboo, Siak, Palembang, and other parts of Sumatra; the islands of Lingen and Bintang, the greater part of the coasts of Borneo and the Moluccas, and the chain of islands extending from Sumbawa to Timor. They possess a literature as rich as that of the Javanese, though less original. Besides the empire of Menangcaboo, which comprised the greater part of Sumatra, this people possessed another empire not less powerful and more celebrated, that of Malacca, which, towards the end of the 14th century, under the brilliant reign of the Sultan Mohammed Shah, comprised nearly the whole coasts of the Malay peninsula, the islands of Lingen and Bintang, and the districts of Campar and Arou in Sumatra.

The *Battaks* or *Battas*, who are found in Sumatra, present perhaps the most extraordinary mixture of civilized and barbarous, or rather ferocious manners. For a long time they have written their language in a peculiar character; the greater part of them are able to read and write, and they possess an original literature, rich, though little known. They have a code of laws of high antiquity; but, from respect to these laws and to the institutions of their ancestors, they are still cannibals. This code condemns to be eaten alive—1. Those who are guilty of adultery; 2. Those who commit a theft under night; 3. Prisoners taken in important wars, that is to say, in the wars of one district against another; 4. Those of the same tribe who intermarry, a practice strictly forbidden; 5. Those who treacherously attack a village, a house, or a person. Whoever commits one of these crimes is judged and condemned by a competent tribunal; the prisoner is then tied to a post, cut in pieces, and eaten by the people. But men only partake of the feast; the eating of human flesh is forbidden to women. However revolting these executions may be, they are nevertheless the result of the calmest deliberations, and are seldom the effect of immediate or private vengeance, except perhaps in the case of prisoners of war. They were formerly also in the habit of eating their parents when these became too old to work; but this practice has long ceased. It is calculated that the number of people eaten in time of peace is from 60 to 100 yearly.

The *Achinese*, who possess the northern part of Sumatra, were, during the 16th and 17th centuries, the predominant people of Malaysia, being in alliance with almost all the commercial nations from Japan to Arabia, and comprising under their dominion considerable portions of Sumatra and Malaya. Although fallen from their ancient importance the Achinese are still much devoted to commerce and navigation.

The *Bima*, who occupy the greater part of Sumbawa, and are a somewhat polished people. The *Bellos* and the *Waikenos* divide between them the greater part of Timor.

The *Bugis* or *Wugis* (Boo-gheeze) are the most powerful people of Celebes, and the most commercial nation of Malaysia, forming the crews of almost all the trading prahus. They possess a native literature, and are considered as the original stock of both the Malays and the Javanese.

The *Macassars* or *Mangkassara* occupy the south-western peninsula of Celebes, and were at time the principal maritime people of Malaysia. They possess a native literature, but it is less than that of the Bugis.

The *Turajas* possess the middle part of Celebes, of which they seem to be the most ancient inhabitants. They are also called *Alfourous* by some voyagers; and are by some writers considered the original stock which has peopled Polynesia.

The *Bujous*, a numerous, warlike, and industrious people, possess a portion of the interior of neo. They are cannibals, and extremely ferocious.

The *Dayaks* of Borneo appear to be identical with the *Haraforas* and *Idaas* of the interior of great island. Their features, manners, customs, language, and religious faith present the most mate and incontestible relations with the physical and moral characteristics, not only of the people who inhabit the interior of the larger islands of the Philippines, the Moluccas, and Celebes, but of many of the natives of Polynesia. But very little is yet known concerning them, or of their and affinities.

The *Tagales* occupy the greater part of Luzon. They possess a peculiar alphabet; but their rature consists chiefly of translations of Spanish works.

The *Ilocos* inhabit the province of that name in the island of Luzon.

The *Bissayas* inhabit the islands of Samar, Leyte, Zebu, Calamines, Mindoro, Mashate, Panay, Ticao, Burias, and others of the Philippines.

The *Sooloos* possess the archipelago of that name; and are famed as pirates. The *Mindanaos* the principal people of the island of that name.

RELIGION.—Islam is the religion professed by the Javanese, Malays, Achine Bugis, Macassars, Sooloos, the people of the Moluccas, the Mindanaoese, and Illanos in the island of Mindanao, the greater part of the people of Samar and Leyte, and some tribes of Lampongs and Rejangs in Sumatra, with some of the Haraforos of Borneo and the Moluccas. Christianity is professed by a considerable number of people Catholicism, by the Spanish subjects in the Philippines, the people of Timor subject to the Portuguese, and several others in Sabrao, Flores, and others of the southern chain of islands: and Calvinism, by a great number of the people of the Moluccas particularly in Amboyna, and other Dutch settlements. Buddhism is professed by the Chinese, who are found in great numbers at Batavia and other parts of Malaysia, and by a portion of the people of Bali; Brahminism, by the greater part of the people of Bali and Madura, and by the Kelangs, a petty tribe in Java. The religion of the Battas in Sumatra acknowledges a sort of Trinity, a paradise, and a hell; and several of its dogmas, with some of the names of its subordinate deities, seem to be of Indian origin. Nothing is known of the religion of the Haraforos of Mindanao, but that they have temples and priests, and practise augury. The Rejangs of Sumatra who have no form of worship, believe in the metempsychosis. The religion of several of the independent tribes of Luzon, and others of the Philippines, consists in the adoration of good and evil spirits, and though they have no temples, altars, or idols, they have nevertheless priestesses, sacrifices, and sorcerers.

GOVERNMENT.—The forms of government exhibit every shade and variety, from that of isolated families living without laws or magistrates, to that extremity of despotism which characterizes the monarchies of Java. The most of the civilized inhabitants of Celebes, Sumatra, Borneo, and Mindanao, are governed by elective kings, who have very little authority. The government of Acheen, in Sumatra, fluctuates continually between anarchy and despotism; that of the Shushunan or emperor of Surcarta, and of the Sultan of Djocjocarta, was lately despotic, the power of these sovereigns being only limited by certain national customs; one of which is, that each village, with its district, forms a sort of body politic, governed by its chief, who is elected by the people. During the first century of Mahometanism in Java, the Mahalem priests formed a real hierarchy, which possessed the prerogative of choosing the sovereign; but of this they were deprived by the powerful family of Mataram, which rendered the throne hereditary. The throne of Sooloo is hereditary, but the Sultan's authority is limited by that of the datus or hereditary nobles, who form a council of state; by the Maharajah-lelah, who is a sort of censor, charged with watching the conduct of both the Sultan and the datus; and by the Orang-kaï-mallik, a sort of tribune of the people, whose duty it is to defend their rights. All the states of Celebes may be considered as aristocratic republics, where the sovereign power resides in an hereditary nobility, who choose, and may even depose the king, to whom they allow very little authority. The only foreign powers who have possessions in Malaysia are the Dutch, the Spaniards, and the Portuguese. The Dutch possess, or domineer over, the whole of Java, and the greater part of Sumatra, where they are continually extending their dominion over the native states. They possess also the Moluccа islands, and generally exercise a predominant influence over all the southern portion of the Archipelago. The Spaniards possess the island of Luzon, and several other portions of the Philippine group. The Portuguese possess only a portion of the island of Timor.

INDUSTRY.—With respect to industry, the Malaysians present the most marked

differences. While the negro races every where live in the forests among the ourang-outangs, in almost total ignorance of the arts and trades which are most indispensable to society, the numerous tribes of the brown race have generally reached a certain degree of civilization, and the most advanced among them have applied themselves with great success to agriculture, navigation, fishing, and even, in some places, to the working of mines. The people of Celebes, the Bugis, the Rejangs, the Javanese, the Illocos, the Camarinas, and the Malays, are excellent weavers. Several of them also shew great dexterity in the working of jewellery, gold and silver ornaments, and particularly in filagree, in the last of which the people of Manado, the Achinese, the Menangcaboos, the Rejangs, and the people of Padang, in Sumatra, particularly excel. The Malays of Borneo and the Javanese are acquainted with the art of cutting and polishing the diamond and other precious stones; and the latter work in wood with such distinguished skill, that they supply with furniture all the Europeans who reside throughout the Archipelago. A great commerce is carried on by the Malaysians in exchanging the products of their different islands, and of their industry. The Bugis, however, are the most commercial people of the Archipelago, and those of the State of Wajou monopolize the greater part of the foreign trade. The latter have colonies established in all the ports of Malaysia, from Acheen to Manila, and furnish almost all the crews of the Bugi proas which navigate the intervening seas. Nearly all the princes and chiefs of the maritime states of Malaysia and their principal officers trade on their own account, and in some places exclusively. Among the foreigners in Malaysia the Chinese carry on the most extensive trade. They are in the Archipelago what the Jews were in Europe during the middle ages, and still are in Asia, Africa, and eastern Europe. But, more active and more industrious than the Jews, besides trading both by wholesale and retail by sea and land, the Chinese also exercise the professions of gardeners, tailors, shoemakers, painters, distillers, and potters; they manufacture all the furnishings required by the civil and military establishments, levy the taxes, excise, and customs, work the mines, and coin the money. The insular position of the greater part of the Malaysians has made them expert and intrepid mariners; and they have carried to a high degree of perfection the construction of their various kinds of vessels. The Achinese and the Siaks of Sumatra, the Macassars and Bugis of Celebes, the Tagales of Luzon, and the natives of Mindanao, Sooloo, and Bali, excel all the other Malaysians in this art. The vessels of the Achinese, the Siaks, the Sooloos, and the Mindanaoese, are the largest, and are furnished with guns. The Tagales and others of the brown races of Luzon or Manila are almost universally employed as cannoneers or pilots, for both of which professions they are eminently qualified. At the same time, however, that Malaysia exhibits so active a commerce, it is infested by a great number of pirates or corsairs, the most notorious of whom are the Achinese and Siaks of Sumatra, the people of Lingen, Kali, and Tulituli, on the north-west coast of Celebes, the Tedongs a tribe of Dayaks, and the people of Sambas in Borneo, the people of Mindanao, the Illanos, and the Sooloos. But owing to the exertions of the British and Dutch cruizers, this public nuisance has been of late years much checked in those parts of Malaysia which are frequented by their subjects. Still the coasts of the Philippines are ravaged almost every year by the corsairs of Sooloo, Mindanao, and Borneo, in spite of the gun-boats which the Spanish Government maintains for the defence of their possessions. The slavery, which is recognised and sanctioned by law throughout Malaysia, with the exception of Java, the ferocity of some tribes, and the weakness and low condition of others, give occasion to the same kinds of abuse, violence, and atrocity, for which the African slave-trade has been so justly decried. All the nations which we have mentioned as the most addicted to piracy, are also the most actively engaged in this trade, which has received a great extension from the demands of the European, and particularly the Dutch, settlements for slave labour.

The principal articles of export are: nutmegs, cloves, cinnamon, pepper, coffee, rice, tin, gold, diamonds, pearls, ivory, edible birds'-nests, sandalwood, indigo, cotton, sugar, tobacco, camphor, turpentine, betel leaf, ambergris, coal, corn, horses, furs, lint and wool of the finest quality, whale-oil and balein, tortoise-shell, holothuries, birds of paradise, cocoas, ginger, sago, canes, rattans, areca nuts, bamboos, bread-fruit, wood of various kinds for building and cabinetmaking, and particularly, teak, coal, &c. The principal articles of import are: opium, salt, cloths, silks, porcelain, copper, oil, soap, wine, liqueurs, fire-arms and other weapons, gunpowder, and a great variety of European articles. The principal trading places are: Batavia, Samarang, Sourabaya, in Java; Rhio; Amboyna; Coupang, in Timor; Macassar, in Celebes; Manila, in Luzon; Borneo; and Acheen, in Sumatra.

For the purpose of topographical description, Malaysia may be divided into groups of islands, namely—1. *Sumatra*, and the smaller islands adjacent; 2. The chain of islands which extends east and west from the Strait of Sunda to New Gui including *Java*, *Madura*, *Bali*, *Lombok*, *Sumbawa*, *Comobo*, *Flores*, *Jindana* or *S delwood*, *Adenar*, *Solor*, *Lomblem*, *Pantar*, *Ombay*, *Timor*, *Semao*, *Rotte*, *Sara*, *C bi*, *Wetter*, *Serwatty*, *Babba*, *Timorlaut*, &c.; 3. The *Banda* and *Molucca Isles* 4. *Celebes* and the smaller adjacent islands; 5. *Borneo* and adjacent islands; 6. *Philippine Islands*.

1. SUMATRA stretches from N.W. to S.E. about 1050 miles, with an average breadth of 165, being vided into two almost equal parts by the equator, and extends from 5° 56 N., to 5° 56 S. lat. broadest in the south, and becomes gradually narrower towards the north. A chain of mount runs through its whole length, keeping nearest the west coast, forming in some places doubl treble ranges, which vary in height from 3000 to 5000 feet, while some of their peaks rise to more t double that height. Mount *Kissumba*, under the equator, is about 15,000 feet high, and M. *Ophir*, 13,000. Between the ranges are elevated plains, where the air is cool, and which, being c of wood, are the best inhabited parts of the island. These also contain many large and b lakes; but very little is known respecting the interior. The low land on the western coast is very row, scarcely any where exceeding 20 miles; but, in the southern part of the east coast, there broad plains, which are intersected by large rivers. This diversified surface occasions consider variety of climate; but the heat, even in the lowest parts of the coast land, are more moderate t in other tropical regions. At the most sultry hour in the afternoon the thermometer generally fluctu between 82° and 85°; and Mr. Marsden says that he never saw it higher than 86° in the shade, and at sunrise it is usually 74°. Inland, as the country ascends, the heat decreases so rapidly that, yond the first range of hills, the people require fires in the morning, and till the day advances; frost, snow, and hail are unknown in any part of the island. The hill country is exposed to a da fog, which rises every morning, and seldom dispersed till three hours after sunrise. The island is ject to the monsoons; the south-east monsoon or dry season, commencing in May and abating September; the north-east or wet monsoon, commencing in November and continuing till March ring which period the country is deluged with almost constant rain. There is also a daily cha of sea and land breezes, the latter of which is cold, chilly, and damp; exposure to it is dang to health, and sleeping in it proves almost certain death. Thunder and lightning are frequent and rific, especially at the change of the monsoons; and destructive earthquakes frequently occur. soil is generally a stiff, reddish clay, covered with a layer of black mould, from which there scri a perpetual growth of rank grass, brushwood, or timber, affording abundant cover for wild bea The most important article of produce is rice; next to it is the cocoa-nut, which also serves general article of food, while its oil is used for anointing the hair, and for lamps. There are large plantations of betel-nut trees and bamboos, sago-trees, and a great variety of other pal Sugar-cane, maize, Chili pepper, turmeric, ginger, coriander, and cummin seed are raised. Pep is a very important article; it seems to flourish in any kind of soil, and is a great article of tra Camphor, benzoin, cassia, and cotton are also produced, and form articles of export. Hemp is tensively cultivated, not for any useful purpose, but for producing *bang*, an intoxicating liquor, wh is smoked in pipes with tobacco. No country is more distinguished for the variety of fine fruits whi it produces spontaneously. Among these are the mangustin, pine-apple, orange, shaddock, lim lemons, bread-fruit, jack-fruit, mango, papaw, pomecranate, tamarind, and various nuts and aroc Owing to the equable temperature through out the year, there is an uninterrupted succession of s and flowers, which diffuse a pleasant fragrance, and many of which are used in medicine and the ful arts. Among these are the cast-oil plant, caoutchouc, ubar, a red wood resembling logwo its properties, and the upas or poison tree, whose deleterious qualities have been so much exagge The zoology is distinguished by some of the most remarkable animals. Elephants and tigers numerous and destructive. A small black bear is common; deer abound in great variety, and monkeys of all kinds are innumerable. There are also sloths, squirrels, skunkards, civet cats, porcupines, hedgehogs, armadillos, bats, alligators, hippopotamuses, guanas, camelions, flying tortoises, turtle, and buffaloes both wild and tame. The latter supply the people with milk, and beef, there being no bovine animals. The breed of horses is small, but well made and there are also sheep of a small breed, goats, and swine both wild and tame, otters, cats, rats, ar Frogs, toads, and reptiles of every kind abound in the swamps; snakes are common, but of very of them is the bite mortal. There is, however, the poisonous viper and the hooded snake; the constrictor is the largest, growing sometimes to a length of thirty feet, with proportionate thickness strength. Birds are extremely numerous, including peacocks, eagles, kites, vultures, crows, jacam kingfishers, the rhinoceros-bird, storks, snipes, coots, plovers, pigeons, quails, starlings, swal minas, parrots, parroquets, geese, ducks, teal, &c. The Sumatran pheasant is a magnificent b the plumage being, perhaps, the richest among all the animals of the feathered tribe. The island be said literally to swarm with insects, many of which are extremely annoying and destructive. the surrounding seas abound with fish. Sumatra is rich in minerals. Gold is chiefly found mountainous districts of the interior, in a pure metallic state. There are no silver mines; but copper mines contain a very rich ore, which resembles Japan copper in presenting the appearance a mixture of gold. In the country of Menangcaboo, in the centre of the island, iron ore is collect fined, and formed into metal, and steel is manufactured of a peculiar temper, and with a degree hardness which has never been equalled in Europe. Tin is one of the great mineral products abounds chiefly near Palembang on the east coast. Sulphur abounds; also yellow arsenic and saltpetre. There is also coal in various places; mineral and hot springs; edible birds'-nests; beeswax in great abundance, and an important article of trade; gumlac, and ivory.

The inhabitants are distinguished as Sumatrans and Malays, but the language of the latter is spoken every where along the coasts; it also prevails in the inland country of Menangcaboo, and is understood in almost every part of the island. The Malay character has been already described, see; and is every where the same. The Sumatran has many of the Malay vices, and a few negative virtues. He is mild, peaceable, and forbearing, but implacable in his resentment. He is temperate and abstemious both in meat and drink; his diet consists of vegetables, and water is his only drink. The people are continent, modest, and courteous, grave in deportment, seldom excited to laughter, and habitually patient. On the other hand they are litigious, indolent, and addicted to gambling. They have made no great progress in manufacturing industry and the useful arts; and their progress in science is equally limited. They have no notion of astronomy or geography; they do not even know that their country is an island; they are entirely destitute of history and chronology, memory of past events being only traditional. They are fond of music, but their instruments are chiefly of the noisy kind; they have no musical science, and only a few simple tunes. Their medical art consists in the application of a few simples, but chiefly in certain charms. They have no writ

laws, and no persons invested with legislative powers. Their disputes are settled according to ancient usage by the chiefs of districts, who are both civil and criminal judges. They purchase their wives, who become to all intents and purposes their slaves, and may be sold again. Land is so plentiful that it is scarcely considered as a subject of property. They have few capital punishments; murder is compensated by money, and adultery is punished by a fine, except among the Battas, whose ferocious customs we have already mentioned (p. 971).

Sumatra is partly independent, and partly under the dominion of the Dutch, who seem to be aiming at the possession of the whole island, as they have now extended their conquests along the whole eastern coast to the neighbourhood of Acheen. That territory, with the country of the Battas, and the possessions of other tribes among the mountains, are probably all that can now be considered independent. *Acheen* or *Achin* (*Atheens*) is a large city at the very north-western extremity of the island, about a league from the sea, consisting of about 8000 bamboo houses, situate in a thick forest of cocoa-nut trees, bamboos, ananas, and bananas, through which runs a river covered with vessels which are engaged in an active commerce. The authority of the sultan, once very extensive, appears now to be limited to the city and its immediate environs; the rest of his territory being in the possession of independent chiefs, and subject to continual anarchy. To the south of Acheen extends the country of the Battas, who form a sort of confederation, consisting of a great number of chiefs of districts; and farther south, along the east coast, are the kingdoms of *Siak*, *Jambi*, *Palembang*, and *Lampong*, all now subjected to the Dutch, whose dominion also extends along the greater part of the west coast; but no where are there any cities or towns of the least importance. The principal places on the west coast are at *Natal*, *Pontchang-catchil* or *Tappanouli*, *Padang*, *Fort Marlborough*, formerly the capital of the English settlements in Sumatra, and *Encoolen* which formerly contained 10,000 inhabitants, but has now much declined. *Menangcaboo*, near the centre of the island, formerly the capital of an extensive empire, is still regarded by the Moslem inhabitants as one of the principal sanctuaries of Islam.

Along the coasts of Sumatra is a number of considerable islands. The principal on the west coast, going northward, are *Engano*, *Mega*, *Sanding*, *South Pagai*, *North Pagai*, *Sai-berout*, *Batou* or *Mintao*, *Claps*, *Nias*, *Baniak*, *Babi* or *Hog Island*, and *Cocos*. On the east coast are *Banka*, *Billiton*, *Sinkep*, *Lingen*, *Bintang*, and a number of smaller islands, which form together the kingdom of Lingen, whose sultan is a vassal of Holland; *Carimon*, *Panjore*, *Rantau*, *Bankalis*, *Roupat*, and the *Arroa* islands, in the middle of the Strait of Malacca. Banka is a large but thinly peopled island, containing rich mines of tin, which is always found in alluvial deposits, seldom more than twenty-five feet from the surface. The tin of Banka is carried to almost every part of the world; but China and India are the principal markets. The island is inhabited by hill-people, sea-people, Malays, and Chinese, of the last of whom there are about 20,000, who perform all the labour of cultivating the pepper and working the mines. Billiton is noted for its iron mines. The islet of *Tanjong-pinang*, adjoining Bintang, was recently ceded by the sultan of Lingen to the Dutch for an annual pension of 60,000 florins. It contains the town of *Rhio* or *Riouw*, which the Dutch have declared a free port, and which is advantageously situate for becoming a great entrepot for the trade of Malaysia, and a rival to Sincapore.

To the north of Sumatra are the small islands of *Way*, *Rondo*, and others; and farther north, the two large groups of the *Nicobar* and *Andaman Islands*, which seem to form, the connecting links between the mountains of Sumatra and the chain of Anapectomiou, which terminates at Cape Negrais. The Nicobar islands are twelve in number; the principal of which are *Sambelong*, *Carnicobar*, and *Nancowry;* which are hilly and woody, and abound in cocoa-nuts. The inhabitants are of the brown Malaysian race, and are a peaceable and well-disposed people. The Danes have at different times formed settlements upon them, and claim possession of the group. The Andamans consist principally of two long islands, the larger of which extends about 140 miles N.-S. They are mountainous, woody, and in some places very picturesque. The inhabitants are negroes, who exist in the lowest condition of savage life. They go quite naked, live in hovels formed of twigs, and never cultivate the ground, but subsist chiefly on fish, which they spear with great dexterity. To the eastward of the Great Andaman is *Barren Island*, a noted volcano. When seen from the ocean this island presents a surface of bare rocks rising 1690 feet above the level of the sea; but the interior forms a great circular basin filled with sea water, and bordered all round with steep rocks, and in the midst rises a volcanic cone, which is very frequently in activity, but can only be seen through a cleft in the outermost rocks.

To the south-west of the most southern point of Sumatra, between 12° and 12° 14′ S. lat., and about 97° 4′ E. long. are situate the *Cocos* or *Keeling's Islands*, a low coral group of a circular form, surrounding a lagoon, and protected by a reef. The interior of the islands is in general not more than from 3 to 6 feet above the level of the sea; the soil is mainly composed of fine calcareous sand, with a small mixture of vegetable earth. The climate, though warm, is very salubrious; the range of the thermometer in the hottest season is from 78° to 86°; in the coldest, from 72° to 81°. A settlement has been formed upon them by two English gentlemen, who have introduced several Malay colonists, with various kinds of cultivated plants, cattle, goats, hogs, poultry, ducks, geese, and turkeys. Turtles are very numerous, and fish are found in great abundance.

2. JAVA, called by the natives *Tana (the land) Jawa* or *Misa (the island)*, is separated from Sumatra by the Strait of Sunda, and extends east and west about 665 miles, with a breadth varying from 56 to 136. It is situate between 105° 11′ and 114° 33′ east long. and 5° 38′ and 8° 46′ S. lat., and contains about 50,000 square miles. It is traversed through its length by a range of mountains, the middle part of which is the most elevated. The north coast is low and swampy, intersected by a great number of rivers, indented with fine bays, and contains many towns and villages. The south coast rises abruptly into high and rugged hills, against which the surf dashes so violently, that, with the exception of a few bays, it is almost inaccessible. The great mountain range contains the craters of at least thirty-eight volcanoes, but of these none are at present known to be in activity, though many emit smoke after heavy rain. In their neighbourhood are numerous mineral springs. The climate is various. Along the low northern coast it is hot and sultry; but inland, on the higher ground, the atmosphere becomes keen and pleasant. In some places among the hills, and even in many of the inland towns, it is often so cold as to render a fire desirable. At Welterreden the thermometer is generally at 86° in the dry season, or during the south-east monsoon, which extends from April till October; and from 83° to 90°, in the wet monsoon, from November till March. The monsoons, however, are not regular. Heavy rain seldom sets in till December, and the heaviest falls in February and March. There is a constant succession of land and sea breezes every day and night. Perhaps in no part of the world is vegetation so richly luxuriant, nor are the wants of man so easily supplied, without any trouble in cultivation. In the lowlands there are extensive rice fields. Around every cottage and village a variety of esculent fruits and vegetables may be gathered throughout the year. On the mountains are lofty trees suitable for masts, while forests of teak of the best quality supply the place of oak for building ships of all classes. The principal articles of produce exported are coffee, sugar, rice, indigo, and tin. The island contains a population of about 6,000,000, of whom 4,000,000 speak the Javanese language, 1,500,000 the Sunda, and half-a-million, the Malay, besides about 50,000 or 60,000 Chinese. The

Javanese are a nation of husbandmen, and their subsistence depends entirely on the produce of the soil. Only about one-third of the surface is supposed to be under cultivation; yet Java produces not only enough of corn for its own consumption, but is, besides, the granary of Malaysia. Within a few years, however, the cultivation of all its staple products has been very much increased; the Dutch Government has given full permission to cultivate spices; and the progress of the island has been altogether more remarkable than that of either Brazil or Cuba. About three-fourths of the island are immediately under the Dutch Government, and the remaining fourth is divided between the Sheshunan or emperor of Java, whose capital is Suracarta, and the sultan who resides at Djocjocarta. Both of these princes are the descendants of the emperors of Mataram, who acquired great power towards the end of the 15th century. In 1755 the Dutch divided the remaining portion of the empire between them. The religion of both of these States is Mahometan, which prevails over almost the whole country. The Dutch territory is divided into nineteen provinces styled residences, each governed by a European resident, and all under the control of the governor-general, who resides at Batavia. The land force consists of 11 battalions of infantry, a corps of pioneers, 2 battalions of artillery, a regiment of hussars, and a few lancers. There is also usually a considerable marine force; and a flotilla of cruisers, manned by native Javanese, is attached to each residence. Notwithstanding the heavy expense of this large establishment, Java, in ordinary years, remits a considerable revenue to the king of Holland.

Batavia, the capital of Java and of all the Dutch possessions in the East Indies, is situate near the west end of the north coast, in 6° 12′ S. lat., 106° 54′ E. long. It is built in marshy ground at the mouth of the river Jillwong, on the site of the ancient city of Jaccatra; several of its streets are traversed by canals, which are crossed by numerous bridges, and have their banks lined with trees in the Dutch style. The houses are old-fashioned, many of them being only hovels, tenanted by natives and Chinese, and the whole has a cheerless and even squalid appearance. The city covers a large space, but the houses are far apart, and the grounds attached to them are extensive. The population, in 1824, was only 53,861, of whom 7000 were Europeans; but it has since very considerably increased, and the city and its environs, within a circuit of 20 miles, are now estimated to contain about 300,000, of whom 30,000 are Chinese. All the Europeans reside in the country, at *Weltervreden*, *Cornelis*, and other places; sleeping in the town even for a single night, exposed to the noxious vapours, being almost certain to occasion fever. Batavia is the depot for the produce of all the Dutch possessions in the Archipelago; but its transport trade has much declined since the establishment of the free ports of Sincapore and Rhio. *Buitenzoorg*, the residence of the governor-general, is about four hours ride or 39 miles from Batavia. The sea opposite Batavia is covered with innumerable islets, which are clothed with luxuriant vegetation. *Bantam*, an ancient city west of Batavia, is now completely decayed; its bay, formerly a great rendezvous of European shipping, is choked up by coral reefs and islands of mud. The Dutch abandoned it in 1817, for the more elevated station of *Ceram* or *Sirang*, 7 miles inland. *Anjier*, still further west, on the coast of the Strait of Sunda, is the place where ships passing in the favourable monsoon generally call for supplies of water and provisions. It is situate on a large plain, adorned with extensive groves of cocoa-nut trees, and flanked by an amphitheatre of the most diversified and picturesque hills. A small fort, a bungalow, and a native village stand in close proximity near the shore. The other principal Dutch towns are *Cheribon*, *Samarang*, and *Sourabaya*, all on the north coast. Cheribon is a small town; but Samarang is a large city, built, like Batavia, in the old European style, with a flourishing trade, and about 38,000 inhabitants. Sourabaya is situate on the shore of a narrow strait which separates Java from Madura. It possesses the only perfectly secure harbour on the north coast, and the only one in which the shipping can be well defended by batteries on shore. The population is estimated at 50,000. Not far to the south-west, in the midst of the immense teak fore-ts which cover the western part of the province, are the ruins of the ancient city of Majiapahit, the capital of the Javanese in the most flourishing period of their empire; they extend for several miles along the banks of the river Kediri. *Suracarta*, the residence of the Emperor of Mataram, is a large city, built in the Javanese style, near the centre of the island, 270 miles S.S.E. of Batavia. It is, however, rather an assemblage of villages than a town; its population, in 1815, was estimated at 105,000. *Djocjocarta*, the residence of the Sultan, is also a large city, built in the same style, about 15 miles from the south coast, with a population estimated at 100,000. At *Brimbanan*, between the two cities, are several ruined temples; and at *Boro-bodo*, near the northern frontier of the territory of Djocjocarta, are the remains of a large Buddhist temple, which crown a small hill, and consist of seven stages or enclosures, decreasing in a pyramidal form to the top, which terminates with a dome. The walls contain about 400 niches, each with the statue of a person sitting cross-legged, and as large as life. It much resembles the temple of Buddha at Gaya, in India. There are many other ancient remains in the island; the most remarkable natural object, besides the volcanoes, is an extraordinary valley called by the natives *Guwo-upas* (Poisoned Valley), three miles from Balor, on the Djiang. It is about half a mile in circumference, of an oval form, 30 to 35 feet deep, and quite flat at the bottom, which is without vegetation, and strewed with large stones and skeletons of human beings, quadrupeds, and birds. It is generally about half filled with a noxious gas, which destroys life in a few minutes.

The island of *Madura*, separated from the north-eastern coast of Java by a narrow strait, forms one of the Dutch provinces or residences. It is 85 miles long, and from 20 to 30 broad. The people generally profess Hinduism, and are governed by three native princes, subject to the Dutch. *Bali* or *Balli*, separated from the east end of Java by a strait, is about 70 miles long, and about 50 broad at the east end, from which it diminishes almost to a point at the west, forming a sort of irregular triangle. It is rugged and mountainous, and inhabited by an idolatrous people, under eight chiefs, who are despotic and independent. Hinduism is the prevalent faith. *Lombok*, to the east of Bali, from which it is separated by a wide strait, is of a compact form, about 53 miles by 45, rugged and mountainous, but populous, fertile, and well cultivated. The people are Mahometans, very civilized, and carry on a considerable trade. The people of both Bali and Lombok devote almost their whole attention to agriculture, and export large quantities of rice. They also produce considerable quantities of fruits, tobacco, cocoa-nut oil, and coffee. Their cotton is of excellent quality, and is considered the best in the East Indies. *Sumbawa* (*Sumbara*, *Sumbhawa*) east of Lombok, is about 180 miles long, but of very irregular form, the northern side being indented by a large gulf which nearly divides the island. It produces sappan-wood, rice, horses, saltpetre, sulphur, wax, birds'-nests, tobacco. Near the N.E. end of the island is situate the town of *Bima*, remarkable for its excellent harbour, which is considered as one of the finest in the world. At the western extremity of a long peninsula on the north coast is the volcanic mountain of Tomboro, of which there was a terrible eruption in 1815. The sound of the explosions was heard over a range of 1500 miles, as far as Bencoolen on the one side, and Ternate on the other, and the shocks were felt at the distance of 1000 miles. The ashes were carried 200 or 300 miles, covering the sea with pumice and cinders, and making the day darker than night over a space of 80 miles. To the north of Sumbawa is a large group of low coral islands, named the *Laterwaters*, to the north-east of these is a similar group named the *Pathboys*; and to the westward the island of *Kambang*, forming the southern side of another large group of coral formation. Adjacent to the north-east coast of Sumbawa is the insulated volcanic mountain of *Gunong-Api*; and 800 miles farther east, in the Banda sea, is another insulated volcano, of the same name. *Manggary* (*Magarai*, *Comas*

considerable island to the eastward of Sumbawa, is dependent on the Sultan of Bima, who is himself a vassal of Holland.

Flores (*Floris, Ende, Œnde, Floresfica, Great Solor* or *Manggary*) is 220 miles in length E.W. by 50 in breadth. It is traversed by a range of volcanic mountains, and subject to earthquakes; it produces slaves, cocoa-nut oil, tortoise-shell, sappan-wood and wild cinnamon; but the interior has never been explored by Europeans. The western part belongs to the Sultan of Bima in Sumbawa; the rest appears to be divided among independent chiefs, some of whom used to be subject to the Portuguese government of Larentuca, situate at the eastern extremity of the island. A fine harbour on the south coast belongs to a colony of Bugis who refuse to acknowledge the Dutch supremacy. To the south-west of Flores is the large island of *Sumba, Jindana* or *Sandalwood*, which abounds with buffaloes, horses, poultry, and pheasants, and produces cotton and sandalwood; the latter, however, is exported only in small quantity, owing, it is supposed, to the superstition of the natives, who are unwilling to cut down the trees, as they believe them to be the abodes of the souls of their ancestors. The island is possessed by independent chieftains.

Timor is above 290 miles in length, by 50 or 60 in breadth, and is described by voyagers as a beautiful island, of an irregular and picturesque surface, having its limestone hills covered with trees and shrubs. It is divided into 63 petty states, all vassals to the Dutch or the Portuguese, who both have settlements in the island. *Dilli*, on the north-east coast, a small town, with 2000 inhabitants, is the residence of the Portuguese governor. *Coupang*, on a fine bay at the S.W. extremity of the island, is the chief Dutch settlement; which has been declared a free port, by way of rivalry with Port Raffles in Australia. The governor resides in the fort of Concordia. To the S.W. of Timor are the smaller islands of *Simao* or *Semao, Rotte, Savu, Benjoar* and others; to the north, *Wetter, Kisser, Cambi;* and to the west, between Timor and Flores, *Ombay, Pantar, Lomblem, Adenar*, and *Solor*.

3. The BANDA ISLANDS are a very scattered group to the eastward and north-eastward of Timor, and are distinguished by the German geographers into three divisions:—the Group of Banda; the south-west chain; and the south-east chain. The first of these divisions is composed of ten islets, all more or less unhealthy, and subject to frequent and violent earthquakes. Of these, *Banda, Lonthoir*, and *Pulo-Aij*, are the most important, inasmuch, as they have been exclusively reserved for the culture of the nutmeg. The average produce of these islands has been estimated at 500,000 lbs. of nutmegs, and 150,000 lbs. of mace, which is the innermost covering of the nut. Banda contains the small town of *Nassau*, the residence of the Dutch governor; the forts *Belgica* and *Nassau*, on this island, and *Hollandia* on Lonthoir, defend the fine bay formed by these two islets and the insulated volcanic mountain of *Gunong-Api*, the third of the name which we have had occasion to mention. The south-west chain consists of several islands subject to the Dutch. The principal are *Letti, Moa, Lackar, Sermatta* or *Serawathy, Kisser*, and *Wetter*; the last two of which have been already mentioned as being adjacent to Timor. The south-east chain consists of a number of larger islands, as *Timorlaut, Larat, Tenember*, the *Great Key* and the *Little Key*; but the only one of them which is of any importance is the Great Key, which contains the town of *Ely*, the seat of a great trade carried on by the Bugis.

The MOLUCCA ISLANDS are situate to the north of the sea of Banda, and include the large islands of *Ceram, Bouro, Gilolo*, and many smaller islets. By some geographers the Banda Islands are also classed under this name. *Ceram*, 220 miles in length, by 50 in breadth, is traversed by a range of mountains, and is very populous. It is divided among several chiefs, all of whom are vassals of Holland. *Bouro* lies to the westward of Ceram, and is 120 miles in length, by 60 in breadth. *Cajeli*, at the east end, is the residence of a Dutch governor; but the chiefs of the island are independent. To the eastward of Ceram is the small island of *Goram*, only remarkable as the most easterly point which the religion of Mahomet has reached. To the south-west of Ceram, and close to the coast, is the celebrated island of *Amboyna*, the principal seat of the cultivation of cloves. It is 32 miles in length, by about 10 in breadth, and contains an area of 434 square miles, with a population of 45,000. Its surface is mountainous, and is divided by a long gulf or bay into two unequal peninsulas. The soil is a rich red loam; the climate is healthy; the average heat of the year is 82° of Fahrenheit; the lowest temperature, 72°. The Dutch governor resides at *Fort Victoria*, on the south-east side of the great bay; and immediately adjoining is the town of *Amboyna*, which contains about 7000 inhabitants. The Molucca Islands, properly so called, consist of *Gilolo, Ternate, Tidor, Motir* or *Matchan, Batchian, Grand Oby, Mysol, Popo, Mortay, Salibaba, Mengis*, and many others. The largest of them is Gilolo, which is 220 miles in length, but of very irregular breadth, consisting in fact of four peninsulas, which meet near the centre of the island. *Ternate*, a small island on the west side of Gilolo, contains a lofty volcanic peak, whose recent eruptions have almost destroyed the surface of the island. It was previously celebrated for the production of cloves, nutmegs, and mace, and was considered of great importance by the Dutch as a commercial and military station. *Tidor*, to the south of Ternate, and smaller, is a still more populous island than the latter was, and also contains a lofty peak.

4. CELEBES, one of the principal islands of Malaysia, extends 769 miles in length between its north-eastern and south-western extremities, but is very narrow, and of the most irregular form, consisting, like Gilolo, of four peninsulas, which are separated by three large gulfs. Its area is computed at 75,000 square miles. It abounds in extensive grassy plains, which afford cover and abundant pasture for deer, wild hogs, and a variety of other game. Rice, maize, and cassava, are the principal agricultural products. The middle part of the island is said to be inhabited by Haraforos; but the greater part of the population are of the brown race, divided into a great number of tribes or nations, of whom the Bugis are the most considerable. Most of the native states are dependent on the Dutch, who have their principal station at *Fort Rotterdam* and the small town of *Vlardingen*, both erected on the site of the ancient city of Macassar, which has a fine and secure roadstead, near the south-west extremity of the island. The principal native state is the kingdom of *Bony* or *Boni*, on the east coast of the south-western peninsula; its actual capital is *Bayoa*, a town of 8000 inhabitants. The middle part of the island is occupied by the kingdom of *Wadjo*, inhabited by Bugis, and governed by an elective king or chief, assisted by a council of forty chiefs, who decide on all questions of peace and war. Adjoining Celebes is a number of islands, some of which are of considerable extent, as *Sangir* and *Siao*, off the north-east point; *Zula-mangola, Zula-bani, Bangay, Bataling, Peling, Bankel, Waxway, Waiwangy, Boutong, Panjasang*, and *Toukang-busi Isles*, off the east coast; *Cambyna, Salayer, Tiger Isles, Schiedam Isles, Crompa, Kalatoa, Madwa*, off the south coast.

5. BORNEO, called by the Malays *Pulo Klemantan*, is a very large island, of a compact form, about 750 miles in length, by 350 in breadth, and contains an area of 260,000 square miles. It lies immediately under the equator, extending from 4° 10′ S. to 7° N. lat. The interior of this great island is still a complete blank in geography, and even of the coasts but little is known. The geological formation of the mountains is generally granitic. The island is said to be rich in minerals, and produces gold, tin, diamonds, camphor, spices, and other valuable articles of commerce. The several coasts are inhabited by people of different races, totally unconnected, governed by their own laws, and having their own peculiar customs: the west coast, by Malays and Chinese; the north-west, by the mixed descendants of the Moors of Western India; the north, by Cochin-Chinese; the north-east by Sooloos; and the east and south, by Bugis. There are, besides, three distinct tribes, who live in prahus, along

the coasts; the Lanuns, from Mindanao; and the Orang-badju, and the Orang-tidong, of unknown origin. The interior and part of the north-west coast are inhabited by *Dayaks* or *Dyaks*, a savage people, who are scattered in small tribes over the island, and are believed to be its aboriginal inhabitants. They are of the brown Malaysian race, and of mild and prepossessing manners; but, as they have suffered greatly from the Malays, they now generally avoid strangers. Some parts of the interior are also inhabited by people of the negro race, named *Dayers* or *Igolotes*. Borneo is divided into a great number of petty states, most of which are independent; but some of those on the west coast are subject to the Dutch, and those of the north-east, to the Sultan of Soloo. The principal of the independent states is the *Kingdom of Borneo* (Bourni), on the north-west coast. *Borneo*, the capital, is situate on a considerable river, and intersected by canals. It contains about 10,000 inhabitants, many of whom constantly live in boats. The *Kingdom of Passir*, on the east coast, is possessed by a Malay Sultan, who resides at *Cotti* or *Gooty*. His subjects, as well as those of Borneo, are notorious pirates. The Dutch have several settlements, divided into two residences or provinces. The Residence of the west coast comprises—1. The States of the Sultan of Sambas, whose capital is *Sambas*, a small town with a Dutch fort; 2. The country of Mumpawa, which extends very far inland, and contains the rich gold mines of Mandor or Montrado, which are worked by Chinese; 3. The kingdom of Pontianak, whose capital of the same name is a small town, with a fort, and 3000 inhabitants; 4. The countries of Landak and Sandou, in the interior to the eastward of the preceding; Landak is renowned in the East for its rich diamond mines, where in 1815 was found a diamond weighing 367 carats uncut, and which Balbi considers to be the third largest in the world; 5. The country of Simpang; 6. The State of Malan, or the ancient empire of Succadana, the throne of which was long occupied by princes of Javanese origin, vassals of the king of Bantam; 7. The territory of Kandawagan. The Residence of the south and east coasts, or of Banjermassing, comprises the countries of Komaay, Pambuan, Mandawa, Great Dyak, the Peninsula of Tanah Laut, and several other adjoining districts in the interior. *Banjermassing*, a town of 7000 inhabitants, with an active trade, situate on a river of the same name, is the capital. The smaller islands geographically attached to Borneo, are the *Natunas, Anambas, Tambelan, St. Esprit, St. Barbe, Daton, Caramata, Kumpal*, on the west coast; *Lavrot, Moreu, Pulo Laut, Triangle-rocks, Little Paternosters, Donderkom, Bemige, Maratabou*, on the east coast; *Balambangan, Bangwy, Malawali, Cagayan-sooloo*, on the north-east coast; and the *Soolo Archipelago*, extending between Borneo and Mindanao. This Archipelago comprises a great number of islands, of which about 60 are inhabited; they are subdivided into three groups, but form only one kingdom, under the Sultan of Sooloo, whose subjects are devoted to piracy. His capital is *Bevan* or *Soung*, a town of 6000 inhabitants, in the island of Sooloo.

6. THE PHILIPPINE ISLANDS are the most northerly group of Malaysia, extending between 5° and 20° N. lat. and 116° and 120° E. long. The group consists of about a thousand islands, of which nine are remarkable for their extent, namely, *Luzon* or *Luçon*, *Samar*, *Leyte*, *Mindanao*, *Zebu*, *Negros*, *Panay*, *Mindoro*, and *Paluwan*. They are all mountainous and volcanic; and their surface is diversified not only by numberless torrents and straits, but also by marshes, mossy grounds, and lakes; there is but little regular firm land. During droughts the miry and spongy soil is full of chinks; earthquakes occasion dreadful ravages; the islands are also frequently visited by violent hurricanes and drenching rains; yet it is to the great humidity that the Philippines owe their fertility. They contain wide forests of stupendous trees, and the greatest part of the birds, beasts, plants, and fruits for which Asia is remarkable are there found of a superior class, besides many productions not met with elsewhere. The sea, rivers, and lakes abound with fish, and the earth teems with valuable minerals. The climate is generally very uniform, and usually mild, but is nevertheless exposed to great and sudden change. The trees never lose their leaves, and the ground always wears a green and smiling aspect. The plants and flowers are beautiful and aromatic; the fruits are nutritive and of exquisite taste; the air is salubrious, and the natives live to a good old age, though foreigners, from the effects of too copious a perspiration, are not generally so healthy. When the Spaniards first arrived at the Philippines, they found scarcely any other food than rice; now, wheat and other grains are abundant, as well as most of the other productions of the Old World, as coffee, sugar, cocoa, hemp, tobacco, cotton, indigo. The same increase has extended to horses, horned cattle, hogs, and deer; sheep alone have degenerated, owing to the humidity of the climate. The prevalent diseases are intermittent fevers; contagious distempers, except the small-pox, are unknown; cutaneous diseases, however, are very common, and this the natives ascribe to the great use of fish. The population is numerous, but only a few hundreds are Europeans; the remainder consisting of Creole Spaniards, Mestizos, Malays, and aborigines. The latter are of both the brown and the negro Malaysian races, the last mostly occupying the secluded portions of the uplands, to which they seem to have receded as the lighter coloured people advanced. Very few of them have ever been domesticated by the Spaniards; and generally it has been found impossible to civilize them; it is observed that their numbers have greatly diminished, owing to the inclemency of the weather, diseases, particularly the small-pox, and their precarious supply of food. The brown races possess all the coasts and low country, some as subjects of Spain, and some belonging to independent princes. The Philippines were discovered in 1521 by Magellan, who lost his life in a skirmish with the natives of Leyte. They were colonized by the Spaniards in 1570; but the total number of settlers of that nation is estimated at no more than 4000, of whom 3000 are in the city of Manila.

Luzon, the largest of the Philippines, is about 350 miles in length, but of a very irregular form and breadth, and comprises an area nearly equal to that of all the other islands together. The portion subjected to the Spaniards is divided into sixteen alcadies or provinces; the independent portion, which comprises the east coast and almost the whole of the interior, is parcelled out among a number of petty chiefs, some of whose subjects are very ferocious and entirely savage. *Manila*, the capital of the Spanish settlements, is situate on the south-west coast, not far from the mouth of the river Passig at the head of a large and beautiful bay. It is a well built town, and is divided by the river into two parts, which communicate by a fine stone bridge. The palace of the captain-general, the cathedral, and two of the principal convents, are the finest buildings; several of the churches are richly decorated. There is a theatre, a college, several schools, and a patriotic society, founded in 1781. There are several manufactures and other works, and the commerce of the city is very important. The city proper is said to contain only 10,000 inhabitants; but, including all the suburbs, the amount of the population has been estimated from 160,000 to 175,000; but there are no means of ascertaining it. The only other town of any importance is *Cavite*, on the Bay of Manila, with about 6000 inhabitants, containing fine ship-building slips, an arsenal, large magazines, and a fine harbour, which also serves for the port of Manila during six months of the year. The Spaniards also possess Samar; the west coast of Leyte; Zebu and Bohol; the coasts of Negros and Panay; the small group of the Calamines; a small part of Mindoro; the small group of the Babuyanes to the north of Luzon; Grafton, one of the Bashee islands; and three small isolated districts in Mindanao, including the town of *Samboangan*, at the south-western extremity of the island, a small place, with 1000 inhabitants, and a fort. The other two districts are *Misamis*, near the middle of the north coast, and *Caraga*, on the east coast. All the other islands and parts of islands are independent.

The *Kingdom of Mindanao* or *Magindanao*, comprises nearly the whole of the east coast, and the greater part of the best portion of the island, with the small group of *Mangis* to the south-east. Se-

Iaugan is the residence of the Sultan; the city of *Magindanao*, which is separated from it by a river, is almost wholly abandoned. The people of this kingdom are formidable corsairs, as are also the Illanos, whose territory extends to the westward of that of Mindanao, and who form a confederation of 16 sultans and 17 chiefs. The independent part of the west coast is occupied by savage tribes.

Palawan or *Paragoa*, one of the largest of the Philippines, is about 280 miles in length, but seems no where to exceed 35 in breadth; it is, however, very little known. The interior is occupied by independent tribes; a great part of the coasts is subject to the Sultan of Sooloo; and the Spaniards possess only the small district of Tay-tay, on the north-east coast.

The most northerly islands of Malaysia are the *Bashee Islands*, situate about midway in the channel beween Luzon and Formosa. The group consists of several small islands, ruled by independent chiefs, except that of *Grafton*, where the Spaniards have a small establishment. The other larger islands are *Bayal* or *Orange*, *Batan* or *Monmouth*, and *Bashee* or *Goat Island*.

Having thus gone over all the islands, we shall conclude our account of Malaysia with a list of the principal seas, bays, gulfs, straits, and capes.

SEAS, &c.—The *Strait of Malacca*, between Malaya and Sumatra; the *Strait of Sunda*, between Sumatra and Java; the *Strait of Bali*, between Java and Bali; the *Java Sea*, between Java and Borneo; *Banca Strait*, between Banca and Sumatra; *Gaspar Strait* and *Clement's Strait*, between Banca and Billiton; the *Caramata Passage* or *Billiton Strait*, between Billiton and Borneo; the *Strait of Lombok*, between Bali and Lombok; *Allass Strait*, between Lombok and Sumbawa; *Sapy Strait*, between Sumbawa and Comobo; *Mandgerai Strait*, between Comobo and Flores; *Timor Strait*, between Timor and Ombay; *Flores Sea*, to the north of Flores and Timor; the *Banda Sea*, between Timor and Ceram; the *Molucca Passage*, between Gilolo and Celebes; *Tomini Gulf*, *Tolo Gulf*, and *Bony Gulf*, on the east side of Celebes; *Macassar Strait*, between Celebes and Borneo; *Celebes Sea*, between Celebes and the Philippines; the *Sooloo* or *Mindoro Sea*, between the Sooloo Archipelago and Palawan.

CAPES.—*Acheen Head*, the northern extremity of Sumatra; *Java Head*, the western extremity of Java; *Cape Bajeado* and *Cape Engano*, the two northern extremities of Luzon; *Cape Espiritu Santo*, the north-eastern extremity of Samar; *Cape St. Augustine*, the most easterly point of Mindanao.

II. AUSTRALASIA.

THE astronomical position of this central region of Oceania is between 1° N. and 55° S. lat., and 112° and 180° E. long. It is bounded on the west by the Indian Ocean; on the north-west, north, and north-east, by an imaginary line drawn between New Holland and New Guinea on the one side, and Timor, Timorlaut, Ceram, Mysol, Gilolo, the Pelew Islands, Carolinas, Feejee Islands, &c., on the other; on the east, by the Southern Pacific Ocean; and on the south, by the Antarctic Ocean. Australasia includes *Australia* or *New Holland*; *Van Dieman's Land*; *New Zealand*; *Papuasia* or *New Guinea*; *New Britain*, *New Ireland*, *Solomon Islands*, *New Caledonia*, *New Hebrides*, *Queen Charlotte's Islands*; *Solomon's Archipelago*; *New Hanover*: *Admiralty Isles*; besides many smaller islands scattered over the intervening seas.

AUSTRALIA.

ASTRONOMICAL POSITION AND DIMENSIONS. — Between 10° and 40° S. lat., and 112° and 154° E. long. Greatest length from east to west, 2400 miles; greatest breadth, from north to south, 1970; superficial area, 3,000,000 square English miles; length of coast-line, about 8000 miles.

GENERAL ASPECT. — Australia presents a very compact mass of land, with few gulfs or bays penetrating to any considerable distance inland, and, so far as has yet been discovered, no large navigable rivers. With the exception, however, of the south-eastern corner, extending from Spencer's Gulf on the south coast, to Moreton Bay on the east, and a small district in the south-west, the interior, beyond what is visible from the shore, is quite unknown. The east coast, throughout its whole extent from Bass's Strait to Torres's Strait, is bounded by ridges of steep,.and in some places, lofty mountains, at various distances from the sea, approaching in some parts within 30 miles of the coast, while in others they recede to double and treble that distance, and leave between them and the ocean a belt of cultivable land, intersected by short rivers, and terminating seaward with a high and sometimes precipitous coast. The southern coast, on the contrary, from Cape Leeuwin to Spencer's Gulf, is generally low and sandy, with only a few scattered eminences, and scarcely any where presents mountains in the interior. The eastern coast of the Gulf of Carpentaria is no where higher than a ship's mast-head; the south and west coasts are more hilly and broken. From Cape Wessel to Cambridge Gulf, the coast of Arnheim's land is flat and wooded, and interspersed with low hills, which present generally flat summits; but, from Cambridge Gulf to Cape Cuvier, the north-west coast exhibits irregular ranges of detached rocky hills composed of sandstone, which rise abruptly from extensive plains of low and level land, while in some places the adjoining sea is studded with numerous sandstone islands. Farther south the coast seems to resemble that of New South Wales, and to be lined at a short distance by ranges of mountains.

SEAS, BAYS, GULFS, STRAITS.—The *Gulf of Carpentaria*, a large expanse of sea on the north coast, 650 miles in length, north and south, by 400 in width. *Shelburne Bay*, *Temple Bay*, *Princess Charlotte Bay*, *Bathurst Bay*, *Trinity Bay*, *Rockingham Bay*, *Halifax Bay*, *Cleveland Bay*, *Edgecumbe Bay*, *Repulse Bay*, *Broad Sound*, *Shoalwater Bay*, *Keppel Bay*, *Port Curtis*, *Bustard Bay*, *Hervey Bay*, *Wide Bay*, *Moreton Bay*, *Tryal Bay*, *Port Macquarrie*, *Port Stephen's*, *Port Hunter*, *Broken Bay*, *Port Jackson*, *Botany Bay*, *Lake Illawarra*, *Shoalhaven*, *Jervis Bay*, *Sussex Haven*, *Bateman Bay*, *Twofold Bay*, *Corner Inlet*, on the east and south-east coast, between Cape York and Wilson's Promontory. *Bass's Strait*, a large open channel, 140 miles wide, between Australia and Van Dieman's Land, first discovered by Mr. Bass, a surgeon of the navy, in an open boat in 1798; *Western Port*, *Port Phillip*, *Portland Bay*, *Discovery Bay*, *Encounter Bay*, *Gulf of St. Vincent*, *Investigator Strait*, *Spencer's Gulf*, *Coffin Bay*, *Anxious Bay*, *Streaky Bay*, *Smoky Bay*, *Fowler's Bay*, the *Great Australian Bight*, *Esperance Bay*, *Doubtful Island Bay*, *King George's Sound*, *Torbay*, *Wilson Inlet*, *Parry Inlet*, *Flinders' Bay*, on the south coast. *Baie du Geographe*, *Cockburn Sound*, *Gage Road*, *Jurieu Bay*, *Geelvink Channel*, *Gantheaume Bay*, *Shark Bay*, *Geographe Channel*, *Exmouth Gulf*, on the west coast. *Dessait Bay*, *Lagrange Bay*, *Roebuck Bay*, *Sunday Strait* and *Cygnet Bay*, *Collier Bay*, *Camden Sound*, *Port George IV.*, *Prince Regent River*, *Brunswick Bay*, *York Sound*, *Prince Frederick's Harbour*, *Montague Sound*, *Admiralty Sound*, *Vansittart Bay*, *Cambridge Gulf*, and *Anson's Bay*, on the north-west coast. *Van Dieman's Gulf*, formed by Melville and Bathurst islands and Coburg peninsula, and opening to the sea by *Clarence Strait* and *Dundas Strait*. *Port Essington*, *Bowen Strait*, *Mountmorris Bay*, *Junction Bay*, *Castlereagh Bay*, *Brown Strait*, and *Arnheim Bay*, on the north coast.

CAPES.—On the east coast:—*Cape York*, the north-eastern point of the continent, from which in order proceeding southward we find *Orford Ness*, *Cape Grenville*, *Fair Cape*, *Weymouth Cape*, *Cape Direction*, *Cape Melville*, *Cape Flattery*, *Cape Bedford*, *Cape Tribulation*, *Cape Grafton*, *Double Point*, *Mount Hinchinbrook*, *Cape Cleveland*, *Cape Bowling-green*, *Cape Upstart*, *Cape Hillsborough*, *Sose Point*, *Cape Palmerston*, *Cape Townshend*, *Cape Capricorn*, *Break-Sea-Spit*, and *Sandy Cape*, two

Moreton, Cape Byron, Smoky Point, Cape Hawke, Sugar-loaf Point, Cape Solander and *Cape Banks*, the two points which form the entrance to Botany Bay; *St. George's Head* at *Sussex Haven; Mount Dromedary, Green Cape, Cape Howe, Ram Head, Point Hicks*, and *Wilson's Promontory*, a rocky mass which forms the most southerly point of Australia, at Bass's Strait. On the south coast, going westward:—*Cape Liptrap; Cape Paterson; Cape Wallomai* and *Point Grant*, at the entrance of Western Port; *Cape Schank; Point Nepean* and *Point Lonsdale*, at the entrance of Port Phillip; *Flat-top Point, Cape Patton, Cape Otway, Bold Head, Cape Sir William Grant, Cape Nelson, Cape Bridgewater, Cape Northumberland, Cape Buffon, Cape Lannes, Cape Bernouilli, Cape Morad; Cape Jervis*, at the south-eastern side of the gulf of St. Vincent; *Cape Spencer* and *Cape Catastrophe*, at the opposite sides of Spencer's Gulf; *Cape Willoughby, Cape Linois*, and *Cape Borda*, on Kangaroo Island; *Cape Radstock, Point Brown, Point Bell, Point Fowler, Cape Adieu, Cape Pasley, Cape Knobb, Point Nuyts, Cape Chatham, Point D'Entrecasteaux, Cape Beaufort*, and *Cape Leeuwin*. On the west and north coast, going northward:—*Point Naturaliste, Cape Leschenault, Cape Ronsan, Cape Cuvier, Cape Farquhar, Northwest Cape, Point Guntheaume, Cape Leveque, Cape Bougainville, Cape Londonderry, Cape Van Dieman*, on Melville Island, and *Cape Arnheim*, at the entrance of the Gulf of Carpentaria.

ISLANDS.—Along the north-east coast there is a very great number of small islands, whose names we need not specify. The same coast is lined by a long chain of coral rocks named the *Barrier Reef*, in the inside of which there is a navigable but intricate channel. Proceeding southwards the first islands worthy of notice are *Moreton Island* and *Stradbroke Island*, which form the eastern side of Glasshouse and Moreton Bays; the *Solitary Isles*, in 30° S. lat.; *Black-head Isle*, to the north of Port Stephen's; *Montague Island*, 36° 20′ S., *Seal Islands, Hogan Islands, Moncur Islands, Rodondo*, and *Glennie's Islands*, to the east, south, and west of Wilson's Promontory; *Phillip Island* and *French Island*, in Western Port; *Lady Julia Percy's*, and *Lawrence Islands*, in Portland Bay; *Kangaroo Island*, off the Gulf of St. Vincent, about 100 miles in length, and from 25 to 30 in breadth, separated from the mainland by Investigator Strait and Back-stairs Passage, abounding with salt and game for the sportsman; *Althorp Island*, S.E. of Cape Spencer; *Thistle's Island, William's Island, Reevesby's Island*, in Spencer's Gulf; *Boston Island*, in Port Lincoln; *Investigator's, Flinders'*, and *Waldegrave's Islands, Nuyt's Archipelago*, &c. on S.W. coast of South Australia; *Archipelago of the Recherche*, on the south coast of Nuyt's Land; *Rottennest Island*, off the Swan River, in Western Australia; *Houtman's Abrolhos*, a cluster of rocks and shoals, separated from the mainland by Geelvink Channel, between 28° and 29° S. lat.; *Dirk Hartog's Island, Dorre Island, Bernier Island, Faure Island*, and *Peron's Peninsula*, off and in Shark's Bay; *Dampier's Archipelago, Howley Shoals, Lively Coral Reef, Scott's Reef, Cartier Island*, and many others, on the north-west coast; *Bathurst Island, Melville Island, Cobourg Peninsula, Croker's Island*, and *Wessel Island*, on the northern coast of Arnheim's Land, or North Australia; *Groote Eylandt* (*i.e.* Big Island), *Rickerton Island, Sir Edward Pelew's Islands*, and *Wellesley Islands*, in the gulf of Carpentaria.

CLIMATE.—As nearly a third of the area of Australia is situate to the north of the tropic of Capricorn, the climate of this portion necessarily partakes of the heat of the torrid zone; but little concerning it is known, since only the coasts have yet been explored. On the north coast, however, a wind from the south raises the temperature with extreme suddenness, and as the same effect is produced by a north wind in the interior of New South Wales, it may be inferred that the wind, in both cases, passes over a highly-heated country, probably over a range of sandy deserts. The other two-thirds of the area lie within the southern temperate zone, and towards the south-east and south the climate is really temperate and delightful; it nevertheless experiences sudden changes, there being instances of the thermometer having varied 25° in fifty minutes, in consequence of a sudden change of the wind. The north-west winds produce so great a degree of heat as to become scorching, and the thermometer then rises suddenly from 80° to 110°. The south-east winds, on the contrary, are very often cold and piercing, especially when there is a sudden change from a hot north-west wind. But in spite of such occurrences, which are to be considered as exceptions, the climate is generally delightful; and the evenings and mornings are as pleasant as in southern Italy. On the lower parts of the coast the thermometer ranges in summer from 36° to 106°; and in winter, from 27° to 98°. The average temperature of the spring months is about 65°; of summer, 72°; of autumn, 66°; and of winter, 55°. At Sydney the thermometer rarely falls below 40° in winter; but at Paramatta, only 15 miles distant, it is frequently so low as 27°; and, in the neighbourhood of the Australian Alps, where the snow is perpetual, the wind from the mountains produces occasionally a sort of snow storm in the low country. As the ground rises the temperature decreases: the winter at Bathurst, west of Sydney, and 1970 feet above the level of the sea, is much colder than on the sea shore, and warm winter clothing has been found necessary even in April, which corresponds with our October. Heavy snow storms also sometimes occur in these elevated regions; and though the snow does not lie in the valleys, yet the elevated flats and downs remain covered for many days; frost also is there frequent, and very intense. The mean annual temperature of these mountain terraces is nearly equal to that of England, but the extremes are much greater. The low interior is always hot, whether dry or flooded. In South Australia, the thermometer has been known to rise in summer to 101° in the shade; in a tent exposed to the sun it was observed one day at 113°; the next day, 117°; the third, 115°; but, on the fourth, only 61°. The climate of that province is indeed very changeable, "ten times more so than that of England," according to one writer; and, though generally salubrious, it is found to be better suited for invalids and persons who have passed the meridian of life, than for young people in robust health and of strong constitutions. It is very dry, though much less

so than in New South Wales; rain frequently falls in South Australia, whereas recently in New South Wales there was a continued drought of eighteen months.

The prevailing winds in summer are from north-east to south-east, and in winter, from north-west to south-west; the atmosphere is generally clear and dry; but dews are frequent and heavy, and sometimes assume the form of a drizzling rain; while in summer the hot winds, which however are of short duration, seldom continuing more than two days at a time, and often less than six hours, are the sure harbingers of a squall or thunder storm which fills the air with a volume of impalpable sand, but clears away every thing noxious, and restores afresh the usual serenity. During summer also a regular sea breeze sets in daily, and much refreshes the inhabitants of the coasts, where, besides, the hot winds are not felt so severely as at some distance in the interior. The most remarkable peculiarity, however, of the Australian climate, is its general dryness, although a great quantity of rain usually falls throughout the year; but it falls in torrents, and is not regularly distributed in showers. The rain, when it does fall, is generally confined to certain months, which vary on the opposite sides of the mountains; floods on the coast occurring simultaneously with dry weather in the interior, while, on the contrary, the latter has its rains when the coast is dry. May is usually the rainy season on the coast; between September and February the rain falls in the interior. There are, however, periods when no rain falls for one, two, or even three years together, and unmitigated drought prevails. These periodical droughts seem to occur at regular intervals of about twelve years; in close succession follows a period of floods or heavy rains, which are at first continuous and as general as the preceding droughts, but decrease with every succeeding year till the period of drought returns. It is only in the years that are intermediate between these extremes that a regular annual succession of seasons is observed; and even then, the seasons are more distinctly marked in the high than in the low country. The seasons, of course, occur at the periods of the year opposite to those of Europe, January being the middle of summer, July, of winter. Summer extends from November till March; and spring and autumn are brief but well defined. The spring months are September, October, and November; the summer, December, January, February; autumn, March, April, May; winter, June, July, and August.

The climate, however, is proverbial for salubrity; endemic diseases are unknown, except a species of ophthalmia, which occurs in October and November, and is occasioned by the prevailing winds of that season. Of a community of 1200 persons only five or six have been known to be sick at one time, and at some of the military stations seven years have elapsed without a soldier dying. Old people, on their arrival from Europe have suddenly found themselves restored to much of the hilarity of youth, and several persons have been known upwards of 100 years of age. Dysentery is the most prevalent disease; but deaths from disease are exceedingly rare, and all disorders yield with facility to the simplest remedies. The diseases, in short, which do occur, are represented as being, in three cases out of four, the result of moral causes. Excess in the use of animal food and of ardent spirits, is in Australia, as every where else, the great promoter of disease. Temperance in eating and drinking will be found by the emigrant the most effectual means for the preservation of health; while excessive indulgence, especially in the latter, is more likely than even at home to undermine his constitution, and to blast his prospects with still more fearful and fatal rapidity.

VEGETABLE PRODUCTIONS.—The plants of Australia are to a very considerable extent so peculiar in their organization that a large proportion of the genera, and some of the entire natural orders are quite unknown beyond its shores or those of the dependent islands. But it is principally in the south that this peculiar vegetation appears; for it changes in character as it approaches the north, till it finally assimilates itself to that of Malaysia. The great mass of the vegetable productions of Australia belongs to the natural orders proteaceæ, myrtaceæ, and compositæ; but the most common genera are the eucalyptus and acacia, which, if taken together, and considered with respect to the bulk of vegetable matter which they contain, nearly equal all the other plants in the country. Of the former above 100 species have been discovered, most of which are trees remarkable for their great size and height. Of the acacias nearly 100 of the leafless species have been observed. The epacridæ, with their allied genera, are nearly as numerous, and hold the same rank in Australia as the ericæ at the Cape of Good Hope. The orchideæ are found in great variety, being highly curious in the intertropical parts of the country, and chiefly land plants. Of palms only six species have been discovered; and of the genus causurina, 13 species. The coniferæ are few in number of species, but very fine; in particular, the

celebrated Norfolk Island pine (araucaria excellsa) occupies an extent of 900 miles along the coast. Among the aspodeleæ the genus xanthorrhea is the most remarkable; all the species yield a gum, and the xarborea produces above its leaves a foot-stalk resembling a sugar-cane, 20 feet long, and terminating with a spiral spike not unlike an ear of wheat. Their stem is used by the natives for spears; the tree yields a fragrant yellow resin which has been found very balsamic. Of the genus urticæ there are numerous species; many of these nettles reach 20 feet in height, and are of proportionally robust habit, with leaves so highly stimulating as to blister severely on the slightest touch. The leguminosæ and compositæ comprehend one-fourth of all the dicotyledonous plants, while the grasses form an equal proportion of the monocotyledonous; but of the latter only one-tenth part of the species have been observed in other parts of the world. Of the cryptogamic plants the greater number are the same as those of Europe, but some of them are also peculiar to Australia. The trees used by the colonists for domestic purposes are the iron-bark tree (eucalyptus resinefera) for building, but generally for fencing; the blue-gum (eucalyptus pipenta) for shipbuilding and wheels; the black-butted gum, for the same purposes; the grey gum for fencing and building; the stringy-bark for boards, building, &c.; the box, for wheels and ploughs; the forest-oak (casuarina torulosa), and the swamp-oak (casuarina paludosa), for cabinet work and shingles; the cedar (cedrela australis), for cabinet work; the turpentine tree, for boats; the sassafras, for flooring; the mountain ash, for carriage work; the sallow, for gig-shafts; the pear, for gun-stocks; the apple, for building; the white cedar, for building and boats; the Norfolk Island pine, for cabinet work; and the bark of the curragong, for cordage. Some of these trees rise to an astonishing height; and Mr. Martin says, that he has seen a vast forest with scarcely a tree of which the height was not 50 to 80 feet without a branch, while the general height of the whole trees was nearly 150 feet. Several trees yield gum-arabic, kins, and manna.

The culinary vegetables and fruits are numerous and of a delicious flavour; but they have been almost all introduced by the British colonists. Among the vegetables may be mentioned potatoes, cabbages, carrots, parsnips, turnips, cauliflowers, onions, asparagus, peas, beans, cucumbers, raddishes, lettuce, spinage, brocoli, capoicums, artichokes, chardoons, celery, knohl, brengall or egg-plant, vegetable marrow, sweet potatoes, and sea-kale. Among the fruits may be mentioned grapes of every variety, strawberries, raspberries, pine-apples, oranges, lemons, citrons, guavas, rose-apples, mangoes, English and Brazilian cherries, pears, apples, peaches, apricots, plums, figs, mulberries, loquats, grenadillas (great flowering passion-flower), pomegranates, cherasnolia, melons both sweet and water, bananas, plantains, quinces, litches, olives, chestnuts, filberts.

Altogether, the Australian flora was estimated by Mr. Brown, in 1814, to contain 4200 species; many more have since been discovered; but our limits prevent us from giving any general account of them, or even naming them. A few, however, are sufficiently remarkable to require particular notice. The New Holland lily is a stately plant which grows to the height of 20 to 25 feet, bearing on its crown blossoms of the richest crimson, from which the birds sip a delicious honey. The pitcher-plant is remarkable for having among its leaves ascidia or pitcher-shaped vessels which contain several ounces of a watery fluid with a slightly sweet taste. A singular and interesting plant has lately been discovered, which produces a fruit larger than a Spanish chestnut, with the same taste. The foliage is beautifully green, and affords a good shade.

ANIMALS.—The native animals of Australia are few in number of species, and of a very peculiar character. There are 58 species of mammalia, of which 46 are peculiar to the country, and of the other 12 species five are cetacea and four seals, leaving, in fact, only three land mammals common to Australia with the rest of the world, and of these one is the large Madagascar bat, another, a species of jerboa, and the third, a species of dog. There are no quadrumana, insectivora, pachydermata, or ruminantia; but there are two species of cheiroptera, eight carnivora, six rodentia, four edentia, and thirty-six marsupialia, of which four-sevenths are exclusively limited to Australia and the adjacent islands. The largest quadruped is the kangaroo, of which, however, there are many varieties, differing in size from the kangaroo rat to the forester, which stands four or five feet high; but these beautiful animals are fast disappearing before the pursuit of the colonists. The opossum tribe are very numerous, and generally take up their abode in the hollows of decayed gum trees, where they are pursued by the natives with a singular dexterity in climbing. The native dog is, next to the opossum and the kangaroo, the most numerous species of quadruped. It

somewhat resembles the Indian jackall, being about two feet long, and two feet high, with a head like a fox, and erect ears; the colour is generally a reddish brown. It does not bark, but sometimes yelps, and utters a dismal howl. It is extremely tenacious of life, very destructive to sheep and poultry, and is consequently hunted without mercy by the settlers. A considerable degree of animosity likewise exists between European dogs and these wild aborigines. But the most remarkable animals are those which we have mentioned above as belonging to the edentata, though, strictly speaking, they bear little analogy to the other animals of that order. Two of the four species are echidni or porcupines, the one entirely covered with thick spines, and the other clothed with hair, in which the spines are half hidden. The other two species are ornithorhynci, animals which have the body and habits of a mole, the feet and bill of a duck, and the internal structure of a reptile, leading a burrowing life amidst the mud of rivers and swamps. Horses, cattle, sheep, and swine, have been introduced by the European colonists, and the country has proved to be remarkably well adapted for the breeding of these useful animals. Indeed no other country in the world seems to be so well adapted for the rearing of sheep, and the production of fine wool. The wool of Australia now enjoys the highest reputation in Britain and America; and most of the beautiful and soft woollen fabrics which go by the names of Indianas, merinos, and schallis, are manufactured from it. Many of the cattle have become wild, and Major Mitchell mentions that on two occasions he found himself surrounded by wild herds, the one amounting to 800, and the other to about 1000 head. Goats and rabbits have also thriven and multiplied, but not to the same extent. A fine breed of asses has also been introduced from South America, but they are not numerous.

Birds are numerous, of great variety, and many of them of beautiful plumage. No order of birds is without its representative in Australia; and there are but two species entirely peculiar to it, though these are more numerous than the others. The most singular bird is the emu, which is fast disappearing. The gigantic crane is a stately bird about six feet high, gregarious and carnivorous, easily domesticated, and frequently seen on the borders of rivers and lakes, where also the black swan abounds. The bustard or native turkey weighs from 15 to 18 lbs., and forms agreeable food. Eagles and hawks are every where to be met with. There are about thirty varieties of pigeon; and countless varieties of beautiful parrots, parroquets, and cockatoos; green, red, crimson, and purple lories, with many other elegant and curious birds; as that singular one, the lyre-tail, which belongs to the gallinaceous order; spur-winged plovers; pheasants of two species; and three kinds of magpie. The common crow and the swallow are every where found; and the Australian sparrow is a very pretty bird with varied plumage, in which a red or scarlet tinge is intermixed. A butcher bird, which destroys snakes and other reptiles, is named the laughing jackass, from its note resembling the coarse and boisterous laugh of a man, but louder and more dissonant. The coachwhip is a small bird whose note resembles the crack of a whip. Snipes, quails, kingfishers, and coots are abundant. The insectivorous birds are comparatively few; but the suctorial species, or honey-suckers, are numerous. The scansorial creepers are limited to two species. The toucans find their Australian representative in the channel-bill; the fly-catchers and warblers resemble those of Africa; there are two or three small finches of Indian genera; and the cuckoos and orioles are not much unlike those of Europe, Asia, and Africa. The aquatic tribes are nearly similar to those of other countries, as the pelican, penguin-goose, duck, teal, widgeon, frigate-bird, noddy, petterel, gull, and other sea birds. The genus cerespis, however, is found only in New South Wales; it is of a light grey colour, and as large as a goose. The musk duck is a curious bird, and has wings so short that it cannot fly.

Insects are very numerous, and of every variety; locusts are common in some parts of the colony of New South Wales; bees are of three species, and all without stings, producing a great deal of delicious wild honey; English bees, which have been recently introduced, multiply fast; the ants are of several varieties, those named the gigantic ant are nearly an inch in length. Their houses are not so high as those of Africa, but they are more solid and compact. Some species are, at one period, furnished with wings, and may be seen issuing from a hole in the earth, flying about in every direction, and then suddenly disappearing, strewing the ground with their wings. Flies are a nuisance in summer, and the blow-fly taints and putrifies every thing it touches. Spiders are generally large; caterpillars sometimes, at intervals of years, swarm in incredible numbers, blighting the finest crops in a few hours. Musquitoes are occasionally troublesome, but are disappearing before advancing civilization; and

those other creatures which accompany the want of cleanliness in England, are equally abundant and unpleasant in Australia. In South Australia fleas exist in incredible numbers.

Reptiles are not very numerous. There are, however, several varieties of snakes, some of which are poisonous. The largest is the diamond snake, which reaches the length of fifteen feet, but is not poisonous. Several water snakes have been found, and some have been seen at a good distance out at sea. There are also scorpions, centipedes, and tarantulas; with numerous lizards, frogs, and adders.

Fish are plentiful along the coasts, but few are found in the rivers, especially in those on the east side of the Blue Mountains, owing to the rapidity of their currents. Whales frequently come into the bays to calve, and seals are found in different coves, especially towards the south. The codfish is taken in the fresh water rivers west of the Blue Mountains, in great quantities and of a large size. Both these and the eels are delicious food. Perch abound in the rivers of the eastern coast; there are many varieties of other fish, with which the markets are well supplied. Large sharks are also sometimes seen. The shells of the Southern Ocean are highly prized, many of them being of great beauty and of elegant forms. Fresh-water mussels and shrimps are obtained in great numbers. Oysters are extremely plentiful, and, though generally small, have a delicate flavour.

PEOPLE.—The aborigines of Australia are considered as belonging to the Ethiopic or black race of mankind, but differ very considerably from the negroes of Africa, particularly in having the hair black, long, and coarse, with the exception of those on the south coasts, whose hair is woolly. The nose, though large, is not so flat as that of the Africans, indeed it sometimes approaches the Roman form; the features generally are far from being disagreeable; the lips are not thick, and the teeth are white and regular. The forehead is high, narrow, and formed at the crown like the roof of a house. The skin is of the colour of wood-soot, or chocolate. The beard is of the same colour with the hair of the head, and is bushy and thick. The colour, however, of the skin seems not to be every where the same; some, even when cleansed from their filth, are nearly as black as Africans, while others have a tint not deeper than that of the Malays. In form, the Australians are generally tall and slender, with small muscles; and are remarkable for agility rather than for strength. They are weak and puny in comparison with the negroes of Africa; and are as much inferior in moral and intellectual qualities and attainments. The Australians are the only people that go completely naked. Of arts and manufactures they have scarcely any idea. Their nearest approach to ingenuity is the fishing net, which is prepared by the women from fibres or grassy filaments. Their only cutting tools are made of stone; and their arms of offence consist of spears, bomerangs, a singular sort of projectile, waddies or clubs, and tomahawks. Of agriculture, even in its rudest form, they have not the smallest knowledge; they have no herds and flocks; nor do they seem even to have any notion of barter, except where intercourse with Europeans has taught them to give their labour for a regular supply of food. They have no houses, but live in holes, or under the shelter of bark screens rather than huts. They seem to have no notion of property; but, on the contrary, hold every thing in common, except their women. They are among the lowest and most degraded of mankind, and are as completely barbarous as can well be imagined. In short, they may be described as rather gregarious than social; for though some personal respect is occasionally seen to be paid to a kind of chief among a tribe, it would seem to be entirely personal, and independent of any elective hereditary right. They believe in good and evil spirits; but it does not satisfactorily appear that they offer them any worship or homage. They seem to be incapable of civilization, and will probably, like the far nobler red men of North America, disappear entirely before the white intruders. In general it may be said that the whole of the aborigines belong to one stock; though it is not a little singular that their languages differ so much, that tribes at short distances from each other, unless inhabiting the banks of the same river, are entire strangers, while almost every community or family, as it may be termed, has its own peculiar dialect. Of their number no estimate can be formed; but depending entirely, as they do, for subsistence on the produce of fishing or the chace, or on gum or bulbous roots, it cannot be very great; and indeed the country is known to be very thinly inhabited.

Of the white inhabitants we need say nothing more than that the great bulk, or almost the whole of them, are of British origin; only a few foreigners being intermixed with them.

DIVISIONS.—The greater part of Australia is still without any political or administrative divisions; but several British colonies have been planted on the shores; and these we shall proceed to describe, under their respective names of *New South Wales, South Australia, Western Australia,* and *North Australia.* Various portions of the coast have also received particular names from the navigators who explored them; as, *New Holland* and *Tasman Land,* on the north-west coast; *Arnheim's Land,* between New Holland and the Gulf of Carpentaria, corresponding with what is now called North Australia; *Carpentaria,* the peninsular region between the Gulf of Carpentaria and the Eastern Ocean; *De Witt's Land; Endraght Land; Edel Land; Vlaming Land; Leeuwin Land,* on the west coast; and *Nuyt's Land,* on the south coast. These portions were discovered and named by Dutch navigators in the early part of the seventeenth century. The whole of the east coast was first explored by Captain Cook in 1770, and named by him New South Wales; the greater part of the south coast was explored in 1800 and 1802, by Captains Grant, Baudin, and Flinders, who bestowed no general names on their discoveries.

§ 1. *New South Wales.*

GENERAL DESCRIPTION.—This territory, according to the terms of the Governor's commission, "extends from the northern cape or extremity of the coast, called Cape York, in the latitude of 10° 37′ S., to the southern extremity of the said territory, or Wilson's Promontory, in lat. 39° 12′ S., including all the country inland to the westward, as far as the 129th degree of E. long., with all the islands adjacent in the Pacific Ocean within the latitude aforesaid of 10° 37′ and 39° 12′ S., and also including Norfolk Island, lying in or about the lat. of 29° 3′ S., and 168° E. long., saving and excepting that part of the said territory hereinbefore described, which is called and known by the name of 'The Province of South Australia,' and which lies between the meridian of the 132d and 141st degrees of east longitude, and between the Southern Ocean and the 26th degree of south latitude, with all and every the islands adjacent thereto, and the bays and gulfs thereof." But within these wide limits only a comparatively small portion of country has yet been explored and colonized.

New South Wales forms the south-eastern corner of Australia, extending along the coast from about Moreton Bay, in 27° S. lat., to the eastern border of South Australia, at Discovery Bay on the south coast, and inland to the river Darling, or the hills immediately beyond it; being altogether about 860 miles in length, from Moreton Bay to Port Phillip, and 550 miles in breadth, on the parallel of Sydney. The country is naturally divided into two very distinct portions: the first of which extends along the south and east coasts, between the sea and the mountains, which form a continuous watershed, in some places scarcely exceeding 100 miles, but for the most part at a much less distance inland; and the second forms a boundless extent of plains, interspersed with hills, and intersected by rivers, all of which flow northward, westward, or southward, to form the Murray, the largest river yet discovered in Australia, and which flows to the south-westward to Lake Alexandrina at Encounter Bay. Within the limits of the defined counties, which extend along the east coast for 325 miles, with a breadth from 80 to 190 inland, sandstone predominates so much as to occupy about six-sevenths of the whole surface; and wherever this happens, little besides barren sand is found in the place of soil; deciduous vegetation scarcely exists; no turf is formed, for as the trees and shrubs are inflammable, conflagrations take place so frequently in the woods during summer, as to leave very little vegetable matter to be converted into earth. In the regions of sandstone, in short, the territory is worthless, and is, besides, very generally inaccessible, thus presenting a formidable obstruction to any communication between isolated spots of a better description, which occur only where trap, limestone, or granite rocks exist. The aggregate extent, however, of these fertile spots is so small, that out of twenty-three millions of acres, only about 4,400,000 have been found worth possessing, while the owners of this appropriated land within the limits have been obliged to send their cattle beyond them for the sake of pasturage. And so extremely arid is the country beyond the mountains, that all the surface water which flows from the vast territory west of the dividing range, and extending north and south between the river Murray and the Tropic of Capricorn, a distance of about 1000 miles, is insufficient to support the current of one small river throughout the year. The country, however, to the south of the Murray is not so deficient in this respect, for there the mountains are higher, the rocks more varied, and the soil consequently better. Every

variety of feature may indeed be seen in these southern districts, from the lofty alpine region on the east, to the low grassy plains in which they terminate on the west. The Murray and its affluents flow through extensive plains, irrigating and fertilizing a great extent of rich country, the soil of which is formed by the disintegration of trap, granite, or limestone. Falling from mountains of great height, these rivers have a perpetual current, whereas in other parts of Australia the rivers are too often dried up, and seldom indeed deserve any other name than chains of ponds. Hills of moderate elevation occupy the central region between the Murray and the southern coast; they are thinly or partially wooded, but are covered with the richest pasturage. The lower country along the skirts of these hills, on both sides, is mostly open, slightly undulating towards the coast on the south, and generally well watered. The grassy plains which extend northward from these thinly wooded hills to the banks of the Murray, are furrowed by the channels of numerous streams, and by the more permanent and extensive waters of numerous deep lagoons; and, indeed, a finer country for the pasturing of cattle can scarcely be imagined. In the western portion small rivers radiate from the Grampians, an elevated and isolated mass, presenting no impediment to a free communication through the fine country around its base, to which Major Mitchell, who first explored it, gave the name of *Australia Felix*. Towards the sea on the south, and adjacent to the open downs between the sea and Port Phillip, is a low tract of country consisting of very rich black soil, which seems to be well suited for the cultivation of grain. Between Port Phillip and Sydney a great part of the country remained till recently unexplored; but during last year (1840) Count Streletsky, a Pole, performed a zigzag pedestrian journey of 2200 miles through it. Towards the sources of the Morumbidgee and its affluents, he found the country particularly favourable for grazing and agriculture, both the hills and the valleys furnishing abundant natural and artificial crops. Farther south, and beyond the range of the remotest squatters, in the valleys of the Murray and its upper affluents, he found the country rich and well watered. Crossing the dividing range, he entered a country to which he gave the name of *Gipp's Land*, in honour of the governor, and which, on account of its extent, its richness as a pastoral country, its open forests, means of inland navigation, rivers, timber, climate, proximity to the sea, and its gradual elevation, rather hilly than mountainous, holds out cheering prospects to future settlers. It extends along the coast, between the sea and the Australian Alps, from the meridian 148° on the N.E. to Corner Inlet and Western Port on the south and south-west. Barometrical measurements give to Gipp's Land, on a line drawn between the dividing range and the sea, from the N.E. to lat. 38° 8′ S. an average elevation of 268 feet. Scarcely any spot, in the opinion of Count Streletsky, either within or without the boundaries of New South Wales, on a large or a small scale, can boast of greater advantages than Gipp's Land. On an extent of 5600 square miles it has a sea-coast line of 250 miles; two harbours already known, those of Corner Inlet and Western Port; eight rivers, besides a navigable lake and lagoons; 3600 square miles of forests, plains, and valleys, which, in richness of soil, pasturage, and situation, cannot be surpassed; 2000 miles of coast range, with the most excellent quality of blue-gum and black-butt timber. The natives he found peaceable and inoffensive.

MOUNTAINS.—These, commencing near the coast of Portland Bay, in the south-west, extend in an almost continuous line, parallel to the coast, beyond the northern limits of the settlements. In Australia Felix are the *Grampians*, the main body of which extends above 50 miles from north to south, with an outlying ridge to the westward named *Victoria* range. From their eastern flank a range of grassy hills, named the *Australian Pyrenees*, diverges to the E.N.E. and connects the Grampians with the *Warragong* or *Australian Alps*, the highest range yet discovered in the country. These may be described as extending N.N.E. from Wilson's Promontory to the 36th parallel, where they attain their greatest elevation; they are then divided into two ranges, the one running to the north-west between the valleys of the Murray and the Morumbidgee, and the other to the north-east, where it forms the watershed between the coast land and the great plains of the interior. *Mount William*, the highest of the Grampians, rises only 4500 feet above the level of the sea; *Mount Cole*, the highest of the Pyrenees, about 3000; but the highest of the Alps being covered with perpetual snow, their elevation, though not ascertained, cannot be less than 15,000 feet. To the westward of Sydney the ranges have been named the *Blue Mountains*, and long formed an impassable obstacle to the progress of discovery in that direction. It was only in 1813, five-and-twenty years after the foundation of the colony, that a road was found across them. These mountains form the connection between the Australian Alps and the *Liverpool Range*, which extends east and west, through three or four degrees of longitude, under the 36th parallel, and presents a very formidable obstacle to any passage across it. The Blue Mountains attain no great elevation, *Mount York*, their highest peak, being no more than 3192 feet above the level of the sea; but the valleys and plains which occur among its ridges are very elevated. King's table-land is 2727 feet high; the Vale of Clwydd, 2496 feet; and Bathurst plains, 1970 feet, above the level of the sea. The highest peaks of the Liverpool range rise between 6000 and 7000 feet. This range is crossed by some frightful ravines, one of which, named by Mr. Oxley, Pandora's Pass, is described by him as being from two to three miles wide at the top, and 3000 feet in depth, while its width at the bottom, which forms the bed of a river, is only between 100 and 200 feet. More practicable passes, however, have been, and are still being discovered across both the Liverpool range and the Blue Mountains. The only volcanic mountain yet discovered in Australia, is situate between the Grampians and the sea, at Portland Bay; it is called by the natives *Murcoa*. but Major Mitchell has

given it the name of *Mount Napier*. It is extinct, but vesicular lava is abundant in the neighbourhood.

RIVERS.—The Rivers may be arranged in two classes; those which flow from the dividing range directly to the sea; and those which flow to the interior, and find their ultimate issue by the Murray. Proceeding along the coast from north to south, the rivers of the maritime region occur in the following order:—The *Brisbane* and the *Logan*, which fall into Moreton Bay; the *Perry*, into Shoal Bay; the *Apsley*, into Tryal Bay; the *Hastings*, which terminates in Port Macquarrie; the *Manning*, which divides, near its mouth, into two branches which form Farquhar Inlet and Harrington inlet; the *Wallamba*, *Richard*, and *Maclean Rivers*, which fall into Wallis Lake at Cape Hawke; the *Myall* and *Karuah*, into Port Stephens; the *Hunter* rises from the southern flank of the Liverpool range, between 151° and 152° E. long., and flows first to the south-west, where it is joined by the *Goulburn*, and then turns to the east by south, entering the sea at Port Hunter; the *Hawkesbury*, which terminates in Broken Bay, is formed by the *Macdonald*, *Cole*, *Nepean*, *Wollondilly*, *Cox's River*, and numerous other streams, which drain a large portion of the eastern flank of the Blue Mountains; the *Shoalhaven River* enters the sea at Shoalhaven, to the south of Sydney. In Gipp's Land are the *Thomson*, *Riley*, and *Macarthur*, which flow into Lake King; the *Perry*, *Dunlop*, and *Barney*, which enter the sea in one stream farther south; the *Macleanochie* and the *Latrobe*, which also form one stream, and enter the sea to the eastward of Corner Inlet. Farther west the only important stream is the *Glenelg*, which falls into Discovery Bay, to the eastward of Cape Northumberland. These rivers having very short courses, are comparatively unimportant; but several of them are navigable for small vessels to a considerable distance inland.

The MURRAY or MILLEWA has its sources in the elevated valleys of the south-western flank of the snowy range of the Australian Alps, between 36° and 36° 40′ S. lat., and on both sides of the 148th meridian. From the point where it leaves the mountains it flows, with various windings, in a general direction west-north-west till it reaches the 140th meridian, beyond which it turns to the south, and enters Lake Alexandrina at Encounter Bay. It is navigable for boats through the greater part of its course, the length of which, including windings, is probably not much less than 3000 miles. Its principal affluents from the south are the *Wimmera*, *Loddon*, *Yarayne*, *Hovell*, *Goulburn* or *Bayuarra*, the *Ovens*, and the *Mittamitta*. The affluents from the north are the *Morumbidgee* and the *Darling*. The Murray was first explored in 1830 by Captain Sturt, who sailed down the stream from the mouth of the Morumbidgee to Lake Alexandrina. The Morumbidgee rises from the northern side of the snowy Alps, and, flowing in a westerly direction, joins the Murray near the 143° E. long., after a course of 1000 miles. It receives from the north the large river *Kobire* or *Lachlan*, which drains the western slopes of the mountains to the south-west of Sydney. The *Darling* or *Karauha* rises south-west of Moreton Bay, and, flowing south-west, joins the Murray between 141° and 142° E. long. Its principal affluents are the *Dumaresque*, *Gwydir*, *Namoy* or *Peel*, *Castlereagh*, *Wambool* or *Macquarrie*, and *Bogan*. But the Darling is rather a water course than a river; for, in dry seasons, it has sometimes no current, nor even water, for many miles; in the summer of 1840, its channel was dry for thirty miles up from the Murray. When first visited by Captain Sturt, he found its water intensely salt; but, six years later, Major Mitchell found it fresh at the same place, but salt for 14 mile, about 50 miles lower down. Its affluent the Macquarrie and also the Lachlan, when first explored by Mr. Oxley, were found to terminate in wide expanses of water, which gave him reason to conjecture the existence of one or more large inland seas; but these expanses have been since found to exist only in wet seasons, while, on the contrary, in dry seasons, they are only dry clayey tracts, traversed by chains of ponds; so that though they are both large streams in the upper part of their courses, they contribute really very little water to their main rivers. In short, the basin of the Murray and its affluents is estimated to comprise an area of 400,000 square miles, but, as all their water is received only from the mountains on the eastern and southern borders, while the country through which they flow is very arid, instead of increasing, like other rivers, as they proceed, they rather decrease gradually, till at last the bulk of water carried by the Murray to the sea is too small to force a clear navigable outlet. It therefore expands into a large lagoon, about 50 or 60 miles long and 30 broad, but is only four feet deep, and salt for one-half of its breadth.

LAKES.—The Lakes are small and unimportant, though very numerous. *Lake George*, in Murray County, was, in 1828, a sheet of water 17 miles long and 7 wide, but in 1835, had dried up to a grassy plain.

NATURAL PRODUCTIONS.—The grand staple product of Australia is wool. Since sheep were first extensively introduced, great improvement has taken place in the quality of the wool, and it has been much more extensively used in the manufacture of fine goods in Britain. In 1830 only 973,330 lbs., or about 5000 bales, were imported into England from New South Wales; while, in 1839, the amount was 32,944 bales; and it is annually increasing. In consequence of the aridity of the climate, and the general barrenness of the soil, agriculture is an anxious and uncertain pursuit. Owing also to the greater profit which is more easily made by sheep, the attention of the colonists has been so much directed to that pursuit, that comparatively little attention is devoted to agriculture, and the colony is very much dependent on supplies of corn from abroad. It has been hitherto supplied chiefly from Van Dieman's Land and the Cape of Good Hope, and sometimes even from North America; but, even with all these supplies provisions have recently risen sometimes almost to famine prices. The aridity which makes agriculture so hazardous and unproductive, is owing, however, not so much to the small quantity of rain which falls, as to the unequal distribution of that quantity throughout the year, and throughout periods of years; deluges of rain being often followed by long-continued droughts. If the actual quantity of rain fell regularly and seasonably, agriculture might in some places succeed as a pursuit, where at present it is merely carried on as subsidiary to grazing, and where it is only possible to carry it on in this way; but in the course of time, when capital accumulates, this irregularity may be partly remedied by artificial irrigation, and large tracts of land now consigned to sterility may be rendered productive. This, however, on a large scale would not be profitable in the present state of the colony; and for many years to come it will be more profitable for the colonists to devote their

principal attention to sheep and cattle, for which they have advantages over all the other nations of the world, and to import all the grain they require, except what is grown in those places which are favourable to its cultivation, such as the alluvial banks of the rivers in the vicinity of the coast. In 1838, the quantity of land under cultivation amounted to 92,912¾ acres, whereof 48,060 were in wheat; 25,043, in maize; 2922, barley; 3767, oats; 429, rye; 39¼, millet; 1788, potatoes; 925½, tobacco; sown grasses, 9939. And the produce, in that year, was 469,140 bushels of wheat; 553,268 bushels of maize; 32,103 of barley; 13,416 of oats; 4878 of rye; 353 of millet; 3496 tons of potatoes; 4952 cwt. of tobacco; and 6960 tons of hay. But though the country is unfavourable to the production of grain, it is likely that the culture of the vine would succeed; and the experiment has been made to a certain extent. Wine of superior quality has already been produced in some places, and there is no doubt that in many situations good wine may be made in abundance. Coal has been found in various places, as in the district of Hunter's River, among the Blue Mountains and the Darling ranges, and in the Port Phillip district. Mines have been wrought for several years at Newcastle on the river Hunter, by the Australian Agricultural Company, who have exclusive right of working it within the limits of the territory. Coal has also been found near the heads of several of the branches of the Hunter, more than 100 miles from Newcastle, as well as at various intermediate points; and from these indications there seems reason to believe that a continuous bed of coal extends throughout the whole valley of that river, which may, in consequence, hereafter become the great manufacturing district of Australia. New South Wales likewise possesses abundance of iron ore of the richest quality; and in these two articles, coal and iron, is supplied with abundant elements for the future industry and prosperity of a numerous and active population.

The whale fishery has in past years been a source of wealth to several of the enterprising colonists, and it may continue to be so; but this pursuit partakes more of the nature of a gambling speculation than of a regular branch of industry; its profits are so uncertain and precarious. It is nevertheless eagerly pursued. In 1828 the produce amounted to the value of £38,000; in 1835, it had increased to £214,000.

POPULATION.—Besides the few aborigines, of whom we need take no further notice (See *anté*, *p.* 985), the population consists of British emigrants and their descendants, with the intermixture of a very few other Europeans. The colony was established in January 1788, as a penal station for criminal convicts; and for nearly thirty years continued to make very slow progress in population, very few free emigrants finding their way to it: but, after the general peace in 1814, public attention was directed to Australia as a suitable place for emigrants of a better description than the early settlers; and within the last five-and-twenty years the population has, in consequence, experienced a rapid and continually advancing increase. But though the country has been largely indebted to the labour of the convicts, it may yet be doubted whether or not the value of their forced industry is not more than counterbalanced by the moral contamination which they have communicated to the whole society. The first colony, established at Sydney in 1788, consisted of 1030 individuals, of whom more than 700 were convicts. In 1810, the population of the colony amounted to 8293; in 1821, to 29,783; in 1828, to 36,598; in 1833, to 71,070; in 1836, to 77,096. In 1837 there arrived 4275 free emigrants, and 2345 convicts, and there were in the colony 2270 births, and 1799 deaths. In 1838, the number of free emigrants was 8840; of convicts, 3073; of births, 2836; of deaths, 2104. In 1839, the free emigrants were 13,358; convicts, 2298; births, 3304; deaths, 2481. Thus the increase of population during these three years was 26,473 free emigrants; 8791 convicts; and 8410 births; making altogether a general total of 43,674, while the decrease by death was 6384. The population, therefore, at 31st December 1839, would amount to 114,386.

The greater part of the convicts, upon their arrival, were formerly provided for by being assigned as servants to the free colonists; but, according to a new system recently introduced, all convicts arriving in future are to be transported to Norfolk Island, and are not to be assigned to private individuals during any part of their servitude. After serving for a certain time with a good character, the prisoner becomes entitled to a "ticket of leave," which gives the holder of it all the advantages of a free person throughout the district over which the leave extends. When the ticket is held for a certain number of years without forfeiture for misbehaviour, the holder is entitled to a "conditional pardon," which is not liable to be forfeited at the will of the Government, but is limited in its sphere of operation to the colony, in which respect it differs from an "absolute pardon," which restores the convict to all the rights and

privileges of a British subject. Under the operation of this system, many convicts have become useful members of society, and not a few of them have risen to be the most enterprising and wealthy among the merchants and cultivators. But people of this class are still distinguished by the name of "emancipists;" among many of the free emigrants there is a strong prejudice against associating with them; and through the force of this prejudice a bill introduced by the Government into the legislative council last year (1840) for constituting municipal corporations in the colony, and allowing emancipists to hold municipal offices, was defeated. But, as the emancipists have not "the nobility of the skin" to contend against, like the free negroes of America, this prejudice will no doubt gradually give way, even as respects themselves, while with respect to their descendants, it can hardly, if at all, be said to exist.

RELIGION.—The colonists, like their countrymen at home, are generally professors of Christianity, but the variety of sects and creeds is just as great among them as in Britain. In 1836, there were 77,096 Protestants, 21,895 Roman Catholics, 477 Jews, and 100 Pagans. The ministers of all sects are provided for by the Government, and a seventh part of the whole territory is set apart as church and school lands for the general purposes of religion and education without reference to sect. The English Episcopal church is under the charge of the Bishop of Australia, who is appointed by the Crown, and resides at Sydney. There are also branches of the Church of Scotland, and of various others of the British sects. The Roman Catholics are under the charge of a Vicar-General.

EDUCATION.—Considerable efforts have been made for the diffusion of education; but no general system has yet been established by public authority, though there are many schools which are supported by the Government, and also numerous private seminaries. Of the former there were in 1837–8, thirty-seven for children of members of the Church of England, and eleven for Roman Catholics, besides a considerable number supported partly by Government and partly by private contributions. An attempt was made by the Government in 1839 to introduce a general system of education on popular principles, which was defeated by the Church party, headed by Bishop Broughton. At Sydney there are two colleges; one named the Sydney College, established by private subscription in 1830; and the other named the Australian College, instituted in 1831 on the model of the Scottish universities, with a principal, and professors of English, Latin, Greek, Mathematics, and Natural Philosophy; and combining a series of schools for elementary instruction, with a gradually extending provision for the higher branches of education. At Liverpool and Paramatta there are two establishments called the Male Orphan School and the Female Orphan School, each containing 125 destitute children, who are reared from infancy, educated and apprenticed out, and subsequently portioned when married.

GOVERNMENT.—The executive government is vested in a governor, who is aided by a council, consisting of the colonial secretary and treasurer, and the bishop of Australia; the legislative power is vested in a council, consisting of the governor and executive council, with the addition of the chief-justice, the attorney-general, the chief officer of the customs, the auditor-general, and seven private gentlemen of the colony, who are appointed by the Crown for life. The laws of England are those of the colony, except only in so far as they are affected by the acts of the legislative council. The laws are administered by a supreme court, consisting of a chief judge and two puisne judges, an attorney-general, and a solicitor-general. Circuit courts are held in various places by these judges, for the same purposes as those held by the judges of England in their circuits. There are also courts of general and quarter-sessions held by the justices of peace, with the same powers as those of England, and with the summary cognizance of all crimes, not punishable by death, which are committed by convicts whose sentences have not transpired, or have not been remitted. There is also a vice-admiralty court for maritime causes; an archdeacon's court for clerical matters; and courts of requests for the summary determination of claims not exceeding the value of £10 sterling, with certain exceptions. Juries have been introduced in both civil and criminal cases. Lawsuits are very frequent, and large fortunes have consequently been made by barristers and solicitors. The executive administration of the law is vested in a sheriff of the colony, who has a deputy in each of the counties. The police forms an important establishment, and is well managed. There are benches of stipendiary as well as unpaid magistrates in Sydney and the other principal towns, aided by head constables, and a civil and military police force at each station. The only military force consist of regiments of the line; no militia force has ever been organized. The police law is very strict.

The rapid extension of settlements over Australia renders it expedient that new arrangements should be made from time to time, for the administration of its affairs; and her Majesty's Government have come to the conclusion that it is desirable that the present territory of New South Wales should be divided into three distinct portions or districts, under the names of a northern, a middle, and a southern district. Suspending for the present any directions about the northern district, the Secretary of State, in his dispatch of 31st May 1840, announces that the middle and southern districts are to be divided by the boundaries of the two southern counties of New South Wales, as proclaimed by the governor on 14th October 1829, and from the limits of these counties by the whole course of the river Morumbidgee and the Murray, till it meets the eastern boundary of South Australia; and that the crown lands in both districts shall hereafter be disposed of at the fixed price of £1 sterling per acre. Against this proposal the legislative council have made a strong remonstrance, as tending greatly to injure the prosperity of the middle district; but, if there must be a division, they wish the southern boundary extended along the coast to Cape Howe, and from that point westward along the course of the Murray.

FINANCES.—The public revenues are derived from various sources; their nature and amount are stated in the following table, for the year ending 31st December 1840:—

SYDNEY.			
Customs,	£182,058	6	6
Duty on Spirits Distilled in the Colony, and Licenses to Distil,	13,228	14	6
Licenses to Retail Fermented and Spirituous Liquors,	13,558	10	0
Auction Duty, and Licenses to Auctioneers,	15,645	18	10
Post Office,	13,413	1	0
Fees of Public Offices,	15,318	10	10
Fines Levied by Courts of Justice and Petty Sessions,	5,956	8	1
Licenses to Hawkers and Pedlars,	63	0	0
Collections by the Agent for the Clergy and School Estates,	4,453	13	10
Crown Lands,	109,484	10	11
Licenses to Depasture Stock on Crown Lands,	7,735	0	0
Assessment on Live Stock beyond the Boundaries of Location,	8,542	8	6
Licenses to Cut Timber on Crown Lands,	657	0	0
Fines collected by Commissioners of Crown Lands,	131	5	0
Rents of Tolls, Ferries, Markets, and Government Premises,	3,935	2	11
Interest on Public Monies deposited in the Colonial Banks,	1,543	16	6
Crown's share of Seizures made by the Department of Customs,	903	17	4
Collected for Water supplied to Shipping from her Majesty's Dock Yard,	386	9	9
Proceeds of the Sale of Public Property,	667	16	9
Proceeds of the Sale of Property found in the possession of Convicted Felons,	293	4	1
Proceeds of the Sale of Forfeited and Unclaimed Property in the possession of the Police,	168	1	10
Sundry small Receipts,	4	0	0
Surcharges recovered,	299	10	11
	398,548	8	1
Proceeds of the Sale of Wheat and Rice imported by Government,	24,286	13	5
Carry over,	£422,835	1	6

Brought over	£422,835	1	6
Repayment by Poor Settlers of Wheat distributed to them by Government,	335	11	7
Proceeds of the Sale of Provisions and Stores landed from Immigrant Ships,	3,303	19	1
Proceeds of the Sale of Property left on board by Emigrants who Deserted,	14	18	6
	27,941	5	7
	£426,489	13	8
PORT PHILLIP.			
Customs,	£21,496	18	8
Licenses to Retail Fermented and Spirituous Liquors,	1,434	10	0
Auction Duty, and Licenses to Auctioneers,	3,199	4	0
Post Office,	778	8	6
Fees of the Harbour Master's Office,	18	15	0
Fees and Fines collected by the several Courts of Petty Sessions,	1,139	8	0
Licenses to Hawkers and Pedlars,	25	0	0
Crown Lands,	217,127	16	6
Licenses to Depasture Stock on Crown Lands,	5,000	0	0
Assessment on Live Stock beyond the Boundaries of Location,	1,707	5	3
Licenses to Cut Timber on Crown Lands,	272	0	0
Fees and Fines collected by Commissioners of Crown Lands,	250	14	3
Proceeds of the Sale of Government Property,	52	6	0
Surcharges recovered,	76	2	2
	252,578	8	4
Proceeds of the Sale of Provisions and Stores Landed from Immigrant Ships,	1,210	9	8
Repayment for Equipments retained by Surveyors,	195	0	0
	1,405	9	8
	253,983	18	0
Total,	£680,473	11	8

The revenue of the colony in 1824 was only £49,471:3:9, including £279:7:9 for the proceeds of land sold. From that period it has been constantly rising to its present amount.

COMMERCE.—The Commerce consists in exporting the raw produce of the colony, and importing in return the articles required for the use of the colonists. The principal exports consist of wool and whale-oil; and the total amount and value of both

branches of trade, for 14 years, are stated in the following table, which is an abstract of various tables in the Appendix to the Report of the Debate in the Legislative Council, on 10th December 1840, on the subject of the proposed division of territory.

Year.	Imports.	Exports.	Vessels Inwards.		Vessels Outwards.		Quantity of Wool Exported.	Value of Wool Exported.
			No.	Tonnage.	No.	Tonnage.		
1826	£360,000	£106,600	62	17,178	60	17,020	lbs. 552,960	£ 48,384
1827	362,324	76,314	103	26,508	63	14,501	407,116	24,306
1828	570,000	90,050	137	32,559	69	20,186	834,343	48,851
1829	601,004	161,716	158	37,342	168	37,586	1,005,333	63,358
1830	420,480	159,659	157	31,225	147	28,822	899,750	34,907
1831	490,152	324,168	155	34,000	165	35,292	1,401,294	70,979
1832	604,620	384,344	189	41,350	194	42,857	1,515,156	73,559
1833	713,972	394,801	210	50,164	213	49,702	1,734,203	103,692
1834	991,990	587,640	245	58,532	220	53,373	2,246,933	213,628
1835	1,114,805	682,193	261	63,019	269	66,964	3,893,927	259,587
1836	1,237,406	748,624	269	65,415	264	62,834	3,693,241	369,324
1837	1,182,222	747,876	260	67,360	262	64,596	4,273,715	320,527
1838	1,506,803	774,770	291	80,060	273	81,325	5,749,376	435,977
1839	2,236,371	948,776	563	135,474	548	124,776	7,213,584	442,504

Before 1817, the circulating medium consisted principally of the private notes of merchants, traders, shopkeepers, and publicans, sometimes for so small an amount as sixpence. To remedy the evils attending such a state of things, the Bank of New South Wales was established with a capital of £20,000 sterling, raised in £100 shares; which almost from the first has yielded to its shareholders a dividend of from 15 to 20 per cent. The Bank of Australia was instituted in 1826, with a capital of £220,000; but its transactions are limited to discounting bills which have not more than three months to run. It has been highly prosperous, and has paid dividends of from 12 to 15 per cent on the paid up capital. A third bank, named the Commercial Banking Company of Sydney, was instituted in 1834, with a capital of £300,000; and in the same year a London company was incorporated by Royal Charter, under the name of the Bank of Australasia, with a capital of £200,000, for the purpose of establishing banks of issue and deposit, not only in New South Wales, but also in Van Dieman's Land, and other parts of Australasia. The whole amount of British coin in the colony in 1836 was estimated at £445,000; and the amount of bank-notes in circulation, at 31st December of that year, at £99,487. But a great proportion of the circulation is carried on by drafts or cheques on the banks, the mass of pecuniary transactions centering in Sydney, and almost every person of property having an account with one of them, in which, for security, a large portion of his money is lodged.

The more settled parts of the colony are traversed by excellent roads, some of which have been executed by Government at very great expense, especially those leading over the mountains.

DIVISIONS. — The country immediately around Sydney, the capital, is divided into twenty counties, named Argyle, Bathurst, Bligh, Brisbane, Camden, Cook, Cumberland, Durham, Georgiana, Gloucester, King, Macquarrie, Murray, Northumberland, Phillip, Roxburgh, St. Vincent, Wellington, Westmoreland, Hunter. By a proclamation issued by the Government in May 1839, the Crown lands beyond the limits of these counties were divided into nine districts, named: — *Port Macquarrie*, *New England*, *Liverpool Plains*, and *Bligh*, along the northern border, between the sea and the Macquarrie river; *Wellington*, between the Macquarrie and the Lachlan; *Lachlan*, between the Lachlan and the Morumbidgee; *Morumbidgee*, between that river and the Murray; *Manaroo*, on the east coast between the Moruya river and Cape Howe; and *Port Phillip District*, "comprising the whole of the lands lying to the south of the main range, between the rivers Ovens and Goulburn, and adjacent to Port Phillip." In the last named districts two counties have since been formed, the one named *Bourke*, on the north side, and the other *Grant*, on the west side of Port Phillip.

§ *Cities and Towns.*

Sydney, the capital, is situate partly in a narrow valley, and partly on the sides of gentle slopes rising from the shores of two of the branches of Port Jackson, named Sydney Cove and Darling Harbour. The streets are long, wide, and quite English in their appearance; the houses are generally lofty and well-built, being interspersed with cottages fronted by small neat gardens, which in

some parts of the town are attached to every house. Along the water side are wharfs, stores, shipyards, mills, &c.; behind these the houses rise in terraces, giving variety to the scene, and by their neatness and elegance conveying the idea of a prosperous community. Many of the shops are fitted up with great taste; the hotels and inns are numerous and excellent; but the public buildings are neither numerous nor elegant. The government-house, though delightfully situate in a charming desmesne which overlooks the harbour, can scarcely be considered more than an overgrown cottage. The churches, chapels, and meeting-houses are plain and modest structures, except that of the Roman Catholics, in which an attempt at imposing grandeur seems to have absorbed every other idea. The town is about three miles in length, having two-thirds of its circumference washed by the navigable waters of Port Jackson. It was founded by Captain Phillip, the first governor of New South Wales, in January 1788, and now contains a population of about 26,000. Sydney Cove is protected by Fort Macquarrie and Dawe's battery, situate on the two points of land at its entrance. Port Jackson is one of the finest harbours in the world. Its entrance, on the east coast, is three quarters of a-mile wide; within, it expands into a spacious basin 15 miles long, in some places 3 wide, and navigable for ships of any burden 15 miles from the entrance, or 7 miles above Sydney; and for 12 miles farther, the Paramatta river, which falls into it, can scarcely be considered more than an estuary. Ships come up close to the wharfs at Sydney, and the cargoes are hoisted at once into the warehouses. On the lofty south head at the entrance a fine lighthouse was erected by Governor Macquarrie. It stands in 33° 51′ 40″ S. lat., and 151° 16′ 50″ E. long. The light can be seen at the distance of 8 or 10 leagues.

The other principal towns round Sydney are:—*Paramatta*, 18 miles distant by water and 15 by land, at the head of Port Jackson, with 3000 inhabitants, and a large factory or penitentiary for female convicts; *Windsor*, on the Hawkesbury river, 140 miles from the sea, to which it is navigable for vessels of 100 tons; *Richmond*, 36 miles from Sydney; *Liverpool*, on the George river, which falls into Botany Bay, and is navigable for vessels of 50 tons up to the town; *Campbelltown*, 12 miles from Liverpool, all in the county of Cumberland. *Newcastle*, on the coast, at the mouth of Hunter river, is a flourishing town fast rising into importnce, not less from its position at the mouth of a fine navigable river, than from the vicinity of the coal mines, which are now actively wrought. *Maitland*, on the Hunter, 25 miles above Newcastle, is also a flourishing town, and the seat of the executive for the county of Northumberland. *Bathurst*, an inland town, 122 miles W.N.W. of Sydney.

Melbourne, the capital of Port Phillip District, was founded so lately as 1837; but is already a flourishing town, with good houses, shops, inns, hotels, and several thousand inhabitants. It is finely situate on a rising ground three miles from the northern shore of Port Phillip, on the north bank of the river Yarra-yarra, which is navigable up to the town, a distance of 9 miles, for vessels of 200 tons; but for the accommodation of larger vessels a shipping port has been established at *Williamstown*, on the projecting point of the west side of Hobson's Bay. *Port Phillip* is a beautiful land-locked basin, from 30 to 50 miles in length and breadth, according to the mode of measuring it, and having a narrow entrance, about a mile and a half wide, which opens to the south-west. Ships of the largest size can approach within 7 or 8 miles of Melbourne, on the side farthest from the sea, where they may ride in safety in any weather, there being numerous sandbanks about the middle of the basin, which break the force of the waves when the wind is southerly. It is surrounded by a picturesque and beautiful country. The nucleus of a settlement has been established at *Geelong*, about 50 miles W.S.W. of Melbourne, at the western extremity of a deep indentation or gulf, which extends inland from the west side of Port Phillip; and another on the north-west shore of *Portland Bay*, where there is a rich alluvial soil; and inland, a splendid tract of country westward of the Grampians, with luxuriant pastures and abundant water, lies open for location.

§ 2. *South Australia.*

This province was established as an experiment on a great scale of a new system of colonization. The various defects in the management of the original Australian colonies, and more particularly the wide spreading out of the population, which tended to deteriorate society, or at least to obstruct the advancement of social improvement, and the moral contamination produced by so large an infusion of convicts, having engaged the attention of several political inquirers, they promulgated a very simple principle, by which not only these defects should be obviated, but a superior colony established with all the vigour and resources of the others, and securing the enjoyment of comfort, happiness, and morality, on the part of the settlers. The principle was, that convict labourers can be dispensed with, abundance of free labourers supplied, and the evils of dispersion avoided by this obvious expedient, namely, that no land should be granted as a free gift, but sold at a price sufficient to defray the expense of procuring labourers from the mother country to cultivate it, and make it available; and that the whole price should be applied exclusively to that purpose. By this means the proper gradation would be preserved between the capitalist and the labourer, and the land be duly cultivated, because it could only be acquired by persons of adequate means; while facilities would be given for introducing a virtuous labouring population of free emigrants, who would have no prospect of raising themselves above their natural rank and vocation, except by industrious exertion. These projectors had influence enough to force their views on the attention of Government; and in 1834 an act of Parliament was obtained for establishing a colony on the principles adverted to. The act provides for the erection of a province under the name of South Australia, extending from the 132° to the 141° E. long. and from the south coast, including the adjacent islands, northward to the tropic of Capricorn. The whole territory within these limits to be open to settlement by British subjects; not to be governed by laws applying to other parts of Australia, but only by those enacted expressly for this colony; in no case to be employed as a station for transported convicts; no waste or public lands to become private property, save by one means only, viz. by purchase at a fixed minimum price, or as much above that price as the competition of public auction may determine; the whole of the purchase money to be employed in conveying labourers, natives of the British islands, to the

colony, so that the purchasers of land may obtain the greatest amount of labour wherewith to cultivate the land, and of population to enhance its value. The whole process is to be under the charge of Commissioners appointed by the Crown, who are empowered to borrow money, and whose authority is "to continue until the colony having attained a certain population, shall, through the means of a representative assembly, to be called by his (or her) Majesty, undertake to discharge the colonial debt, and to defray the cost of future government; when the colony is to receive such a constitution of local government as his (or her) Majesty, with the advice of the Privy Council, and with the authority of Parliament, may deem most desirable." The population of the province must amount to 50,000 at least, before it be lawful for the Crown to frame a constitution of local government for the colony. The province, as above defined, contains an area of nearly 300,000 square English miles, or 192,000,000 acres.

The most highly-coloured and flattering accounts of the beauty, salubrity, and agricultural capabilities of the province were published in Britain, and thereby several thousand people were induced to try their fortune in this terrestrial paradise, but only to be disappointed; for the country has proved to be, like all the rest of Australia, generally ill adapted for agriculture, and the most of it suited only for pasturage. The principle of concentration has been in consequence entirely abandoned; the sale of land has ceased to be confined to the narrow tract originally laid out in sections; speculators are picking out the best lands, for which they obtain special surveys, in every accessible part of the province; and the people are spreading in all directions, in order to suit themselves to the circumstances of the country; while, at the same time, the moral pestilence, which was dreaded so much, has been introduced by emancipists and runaway convicts from New South Wales and Van Dieman's Land. This experiment in colonization would indeed have proved a complete failure, but for the vicinity of these two older colonies, from which alone the requisite number of sheep and cattle to stock the new settlements of South Australia could have been procured at such an expense as the colonists could bear. So that, instead of the virtuous, happy, and concentrated agricultural population which was contemplated, there will be only a scattered pastoral people in the interior, while those on the coasts are devoting themselves to whale-fishing and maritime and commercial pursuits. Still, however, as might be expected in so large a province, there are tracts of rich soil capable of producing abundant cereal crops; and the climate is much more humid than that of New South Wales, which is sometimes parched up by long-continued droughts, while frequent rains fall in South Australia, brought by the south-west winds, which prevail for nine months in the year. But, notwithstanding these advantages, it is admitted that for a series of years, the prosperity of the colony must mainly depend on its herds and flocks.

While private speculators have thus been obliged to alter their views, the public affairs of the colony have been so mismanaged, or at least the previous calculations of expense have been so much exceeded, that the Commissioners have been obliged, after expending all the money that has come into their hands, to apply to Government for pecuniary assistance, which has been given them by a vote of credit for £155,000.

The greater part of the province is still unexplored, and it is only of the south-eastern portion, along the coasts of Spencer's and St. Vincent's Gulfs and Encounter Bay, that any thing is known. The first settlements were formed in December 1836, on the east side of the Gulf of St. Vincent, about fifty miles from the ocean, and the city of Adelaide founded there, in one of the most singularly unfortunate spots, we believe, ever selected for the site of a capital. It is six miles from the sea, on the banks of an unnavigable river, which has been very appropriately named the Torrens, for it is in fact a torrent, with a continuous stream in winter, but presents in summer only a chain of pools, and terminates before reaching the sea, in a marshy flat named the Reed Beds. The town and neighbouring country were laid out in sections; speculation in lots rose to a perfect mania; the most extravagant prices were given for building ground; for a time the new city made the most rapid progress, being supported by the continual influx of immigrants; and the population soon exceeded 6000 inhabitants. But the tide of immigration has been diverted to the more eligible station of Port Lincoln, on the south-western shore of Spencer's Gulf, which will now probably become the centre of South Australian colonization, while Adelaide, from its disadvantageous situation, with no intrinsic recommendations to support it, will consequently decline, or at best remain stationary.

The two gulfs already mentioned form very deep indentations in the southern coast, and are separated from each other only by a long, narrow, and barren jutland,

named York Peninsula, which terminates with Cape Spencer. Between the Gulf of St. Vincent, and the Lake Alexandrina and the lower Murray, there is another peninsula terminating with Cape Jervis, and intersected by three great mountain masses, named the *Mount Lofty*, *Mount Barker* or *Great Ironstone*, and *Mount Wakefield* ranges, which form among them table-lands and valleys of considerable elevation, presenting a beautifully undulating and lightly wooded country. But in some places there are sharp precipitous ridges, rising from 1800 to 2000 feet. This tract is roughly estimated to consist of one-third of sandy soil adapted for agriculture or pasturage, one-third of stringy-bark forest, and the remaining one-third is covered with brushwood or rock, which might perhaps be suitable for the vine. From the vicinity of Adelaide, a range of barren heights extends northward along the eastern side of both gulfs, rising in some places to a considerable elevation, and terminating, in 29° 20′ S., with Flinders' range, which is inclosed in a peninsula formed by one of the most singular lakes yet known. This lake commences not far from the head of Spencer's Gulf, takes a circuitous course of fully 400 miles, with an apparent breadth of from 20 to 30 miles, following the sweep of Flinders' range, and nearly encircling it in the form of a horse-shoe. The greater part, however, of the vast area contained in its bed is, or at least at the time of the discovery was, dry on the surface, and consisted of a mixture of sand and mud of so soft and yielding a character as to render perfectly ineffectual all attempts to cross it, so as to reach the edge of the water, which appeared to be at the distance of two or three miles. It was discovered by Mr. Espy in 1840; but on one occasion only was he able to reach and taste the water, which proved to be as salt as that of the sea. The lake, on its eastern and southern sides, is bounded by a high sandy ridge, with salsolæ and some brushwood growing on it, but without any other vegetation. The other shores presented, as far as the discoverer could judge, a very similar appearance; and on ascending several of the heights in Flinders' range, from which the views are very extensive, and the opposite shores of the lake distinctly visible, no rise or hill of any kind could be perceived, to the west, north, or east. The whole region appeared to be one vast, low, and dreary waste. He named it *Lake Torrens*, in honour of Colonel Torrens, the great promoter of the colony. The greater part of the country traversed by Mr. Eyre in this expedition, was dreary and impracticable, generally level, without trees or grass, and held out no inducements for the extension of settlements in that direction.

The best and most fertile portion of the colony seems to be that to the east of Adelaide, between the Gulf of St. Vincent and Lake Alexandrina, where several portions of rich soil have been found interspersed amidst extensive tracts fit only for pasturage. The whole of it, however, is beautiful in appearance, very moderately wooded, principally with oaks and mimosas, and contains abundance of emus and kangaroos. The banks of the Murray afford an inexhaustible supply of wood for fuel; but no coal has yet been discovered in the province. *Lake Alexandrina* is a large expanse of water, 50 miles in length, by 20 or 30 in breadth, formed by the river Murray, the free outlet of which has been dammed up by a sandy ridge, which extends along the shore of Encounter Bay. The lake is partly fresh, partly brackish, and partly salt, and has a depth of only four feet, with a bottom of mud; the eastern part of it forms a distinct basin about 50 miles in circumference, which has been named *Lake Albert*, and is surrounded by a fine country. The south side, however, of Lake Alexandrina is not one continuous ridge of land; it consists of several islands, the largest of which is skirted on the east by Sturt's boat channel, while the main channel or outlet of the lake runs close into the mainland to the westward of the island for a space of 16 miles, and joins Sturt's outlet at the distance of less than a mile from the sand-hills on the coast. This channel forms a noble stream, with a width varying from 500 yards to a mile and a-half, and a depth of from 4 to 10 fathoms. On its western bank are several fine fresh-water inlets, with deep water, forming so many natural and ready made wharfs. In September 1840, a navigable channel, from the sea into this river, was discovered by Mr. Pullen, the colonial marine surveyor, containing a depth of 12 or 13 feet over the bar at high water, but surrounded by shoals and breakers. The governor has given it the name of *Port Pullen*; and there is every reason to think that in moderate weather steamers, and in leading winds sailing vessels, of six feet draught of water or under, may with safety run into the Murray; while in rough weather there will be shelter for such vessels at *Rosetta Cove*, *Victor Harbour*, and *Freeman's Nob*, from 9 to 14 miles distant. The country to the eastward, along the coast, forms a low and sandy shore.

The *City of Adelaide* is built on two limestone heights, on the opposite banks of a chain of pools named the Torrens, in a bare sandy tract, six miles from the sea, and about four miles from the Mount

Lofty range of hills. It consists of two towns, laid out in regular streets, but the houses are built of every kind of material, from the humble mud hut to the neat brick building with plastered front. A spacious government house has also been erected at the cost of £15,000! The only supply of good water is from very deep wells dug with great labour and expense in the sandy soil, the water of the Torrens being bad and unwholesome. The city has two ports on the east side of St. Vincent's Gulf. The one, named *Port Adelaide*, 7 miles north-west of the city, is a muddy salt-water creek about seven miles in length, and about 70 yards wide at the entrance, with two bars, over which there are 10 or 12 feet of water in ordinary tides. The country around is low and swampy, frequently overflooded, affording little or no shelter for the shipping; and vessels cannot put to sea out of it without a fair wind, the channel being so very narrow as to prevent the possibility of working to windward. Great exertions, however, are making to improve it; and a railroad to connect it with the city is in contemplation. The houses at the port are built on a glaring and loose sand-hill. The other port, named *Glenelg*, is about the same distance to the south-west of Adelaide, also at the entrance of a creek, which is the occasional mouth of the Torrens, when it has water enough to reach the sea. Ships anchor in Holdfast Bay, an open roadstead, quite exposed to the south-westerly gales, which cause a tremendous sea to run into it; and for nine months in the year the wind is from that quarter.

Port Lincoln is a magnificent harbour, or rather a series of three harbours, with two entrances formed by Boston Island, but nevertheless mostly land-locked. It is of a semicircular form, almost surrounded by hills wooded to the water's edge, sufficiently high to be picturesque, but neither so high nor so steep as to form a barrier to the interior. Deep water close in shore washes a beach of gravel or stones, except on the south side, where for a short space it is sandy and comparatively shallow. The hills are generally of one character, open she-oak forest somewhat stunted rising from a soil six or eight inches in depth, over a stratum of limestone. Some of the hills, however, are barren, and covered with granite or ironstone; but most of them have sufficient grass for pasturing sheep, while the valleys might support a limited number of cattle, or partly admit of cultivation. The scenery is splendid, but the country beyond, and towards the interior, seems not to be very inviting in point of fertility and adaptation for culture. Nearly opposite Port Lincoln, on the eastern shore of Spencer's Gulf, is an available harbour named *Port Victoria*; and on the eastern side of York Peninsula, nearly in the latitude of Port Adelaide, is a safe and commodious anchorage, which has been named *Port St. Vincent*.

§ 3. *Western Australia.*

This province lies between 31° and 35° S. lat., and 115° and 129° E. long.; is the south-western corner of Australia. The distinguishing features of the territory are three distinct parallel ranges of primitive mountains bordering on the sea coast in the direction of north and south. The highest and most easterly range terminates near King George's Sound; the second, named the Darling Range, passes behind the Swan River, and terminates with Cape Chatham; the third and lowest range extends from Cape Leeuwin to Cape Naturaliste; but 300 miles farther north, another range appears on the coast in the same line of direction, and is probably a continuation of the same formation. Indeed both the soil and the climate are much the same as in the other parts of Southern Australia, the country being generally better adapted for pasturage than for agriculture. So far as it has yet been occupied, the territory appears to rest on a granitic basis, and the soil is very thin. The wet season commences in April with slight showers, which continue to increase in number and force throughout May, June, and July; after which they begin to decrease, until they cease altogether in November, when the dry weather begins. These two seasons, with an intermediate spring following the conclusion of each, embrace the circle of the year. The wet season is usually called the winter, and the dry season the summer; but neither of them has the character of the corresponding season in Europe. The prevailing wind at sea, off Cape Leeuwin, is westerly throughout the year; but on the coasts, during summer, there is a regular daily alternation of land and sea breezes. In winter, gales from the north-west and south-west are very frequent, and are usually accompanied by heavy falls of rain. In summer the atmosphere retains so little moisture, that none but hardy and fibrous plants can withstand the drought; the atmosphere is then so clear, and the reflection of the sun so great, that the thermometer, in the shade and near the ground, sometimes reaches 105°. The hottest months are January, February, and March; but the evenings and mornings are generally cool and pleasant; the mid-day heats are tempered by a refreshing sea-breeze from the south-west; and a land breeze from the east prevails in the morning. Slight fogs occasionally hang over the rivers, and a refreshing dew falls at night; but as there are no considerable marshes, the country is free from malaria and noxious vapours. The winter months are June, July, and August; the two latter of which are the most rainy. There are sometimes smart frosts, and now and then a little ice; but all traces of them disappear at sunrise. Hailstones of very large size occasionally fall; but snow is unknown. The greater part, however, of the winter is remarkably temperate and fine, but the changes of temperature are often sudden; and during the rest of the year nothing can be more delightful than the climate generally, and its invigorating influence on the human constitution renders it very suitable for invalids. The principal diseases are rheumatism, dysentery, scurvy, and catarrh, in winter; and, in summer and autumn, a kind of subacute purulent ophthalmia, which is endemic, and is the only disease that can be strictly so considered. Cases of fever are seldom met with. The average mean temperature of the year is from 60° to 64°; the seasons have hitherto been found to return steadily

and uniformly; and the agriculturist is enabled to carry on his operations with less interuption than in any other part of the world. All kinds of domestic animals generally thrive well; but sheep and cattle are sometimes attacked with a disease which carries them off in a few minutes. The disease has chiefly appeared in flocks recently imported and in feeble condition, and in cattle engaged in long joufneys in the bush, where the food is scrubby and coarse. Flocks kept on low damp ground near the coast, or in high scrubby ground destitute of healthy grass, or in passing the Darling range into the interior through a scrubby country, have too been generally affected. Horses are fed on the same ground without the smallest injury.

This colony was established in 1829. The settlers at first met with many difficulties and discouragements; the land near the coast was found to be poor and sandy; but, subsequently, on exploring the interior, fine pastoral and agricultural tracts have been discovered; the gradual introduction and multiplication of sheep and cattle, has begun to enrich the settlers; and the colony is at last, though slowly, beginning to prosper. At the end of 1829, the number of residents in the colony was 850; in 1839, the number had increased only to 2154, of whom 1302 were males, and 852 females. The colony has a lieutenant-governor, and a legislative council appointed by the Crown; but the laws are still strictly those of England, so far as they are applicable to the circumstances of the country. The territory has been divided into fourteen counties, named *Twiss*, *Perth*, *York*, *Murray*, *Grantham*, *Wellington*, *Wicklow*, *Sussex*, *Nelson*, *Lanark*, *Goderich*, *Stirling*, *Hay*, and *Plantagenet*; but these are far from being generally occupied. The principal part of the colonists were established on the *Swan river*, a considerable stream which flows into Cockburn Sound, on the west coast; the remainder are settled at *King George's Sound*, on the south-east coast; and it is principally from these two points that the settlements are extending. A company has been formed in London for the purpose of establishing a new colony at *Port Leschenault*, on the coast of the Baie du Geographe, in Wellington county, about midway between the two older settlements; to which the name of *Australind* has been given. The principal towns are *Perth* and *Freemantle* on the Swan river, and *Albany* on King George's Sound.

§ 4. *North Australia.*

This province forms the most northern part of the continent, and extends westward from the Gulf of Carpentaria, corresponding with the Arnheim's Land of the Dutch navigators. The only settlement yet established is at *Port Essington*, a deep indentation on the north side of Cobourg Peninsula, where a new town named *Victoria* was founded in 1838. The harbour is a splendid one; the deep-water anchorage under Point Record would contain twenty-five sail of the line; and in and about the anchorage off Victoria 500 sail of merchant-men might lie. The outer anchorage or roads is capable of containing the whole British navy.

North Australia is within the range of the Indian monsoons, of which the north-west usually sets in about the beginning of November, and that from the south-east in the early part of April; but they sometimes vary a whole month in the periods of their recurrence. The average annual temperature at Melville island, to the westward of the peninsula, is about 83°; the average winter temperature, 80°; of summer, 86°; and the extremes are 75° and 87°. During the rainy season in the first year of the settlement, the heat was oppressive; very little rain fell, and the thermometer on shore in the tents seldom fell, during the day, below 95°; it generally stood at 100°. On board it varied from 80° to 90°. The nights on shore were, however, comparatively cool, no cases of sickness occurred, with the exception of extreme annoyance from musquitoes and sand flies the climate proved most healthy. A south wind from the interior raises the temperature with extreme suddenness. The summer monsoon is attended with very heavy falls of rain; but these seldom continue above two or three hours at a time. From June till September no rain falls; a great quantity of moisture must nevertheless be always suspended in the atmosphere, even during the prevalence of the dry or south-east monsoon; for iron articles are kept from rusting only by incessant care; and the exposed surfaces of the rocks along the coasts, are so generally coloured by the oxide of iron, that they might, without impropriety, be described as red. Among the native fruits and plants have been found a species o nutmeg of fine flavour, and the cotton-tree; and there is no doubt that every kind of spice, with sugar, rice, and cotton, might be produced in this province.

Norfolk Island, 900 miles E.S.E. of Sydney, in 29° 1′ S. lat. and 168° 10′ E. long., contains about 11,000 acres of land, generally of a rich brown mould. It is extremely beautiful, affording fine tropical scenery of hill and dale. It produces the New Zealand flax of great size, and several cabbage palms;

but the most peculiar and valuable part of its vegetation is the magnificent araucaria excelsa, or Norfolk Island pine. In 1791 it was colonized by the government of New South Wales, for the purpose of raising supplies for that colony; but is now used as a prison exclusively for convicts, where they are to be subjected to a new plan of treatment introduced by Captain Maconochie, and which is expected to produce the best effects in reforming them, and fitting them to be restored as useful members to society. Between Norfolk Island and the coast of Australia there are several small islands and reefs scattered over the ocean. The principal of them are: *Lord Howe's Island; Seringapatam Island; Middleton's Island; Nelson Bank*, and *Solitary Isles*.

TASMANIA or VAN DIEMAN'S LAND.

SITUATION AND EXTENT.—Between 41° 20′ and 13° 40′ S. lat., and 144° 40′ and 148° 20′ E. long. The greatest extent from north to south is estimated at about 210 miles, and from east to west, about 150; the superficial area contains about 24,000 square English miles, or a little less than Ireland.

GENERAL ASPECT. — The face of the interior is very diversified, and decidedly mountainous. It consists, however, not of mountain ranges, but rather of isolated peaks, varied by lofty table-lands and extensive fertile valleys and plains. In the south, nothing can be more rude or bold than the general appearance of the landscape; hills rising above hills, all thickly covered with trees, with here and there a majestic rocky eminence towering aloft, form the prospect. On proceeding into the interior, the country loses much of its stern and forbidding aspect; there many fine open spots are found very lightly timbered, and extending in some instances for several miles, but always locked by mountains. Near the middle of the island there are beautiful plains, intersected in some places by streams, and extending as far as the eye can reach; and, on proceeding northward, every diversity of hill and dale, woodland and plain, forest and tillage, enlivens the scene. The western portions have as yet been but imperfectly explored; but they are represented as generally bold and mountainous, although possessing well watered and fertile spots. Much of the land in that direction, as well as that towards the east coast, lies high and exposed.

MOUNTAINS. — There are several mountains of great elevation. *Mount Wellington* or *Table Mountain* rises 3795 feet above the level of the sea, behind Hobart-town. It has a bold and rugged aspect and is snowcapt for eight months of the year, but is seldom obscured by clouds. The mountains on the south-west coast, near Port Davey, are still higher, and are snowcapt for a great part of the year. They form a long mass stretching inward for several miles, and rise in some places 5000 feet. The hilly character, indeed, of the southern side of the island is but little interrupted, the hills being not only frequent but continuous. Some of the principal masses have been named: Mount *Direction*, *Frankland Hills*, *Arthur Hills*, the *Hartz Mountains*, *Adamson Peak*, *Mount De Witt*, all in the south-west, between Port Macquarrie and Storm Bay. In the north-east, *Benlomond* rises 4200 feet. The *Table Mountain*, in Tunbridge county, near the centre of the island, rises 3800 feet; the *Peak of Teneriffe* or *Wylde's Craig*, 65 miles N.W. of Hobart-town, 4500; *Quamby's Bluff*, south-west of Launceston, 3500; *Mount Field*, 3000; *St. Paul's Dome*, 42 miles S.E. of Launceston, 2500.

RIVERS AND LAKES. —The *Derwent* issues from *Lake St. Clare*, which is 10 miles in length by 3 in breadth, 70 miles N. of Hobart-town, and flows to the south-east, where it forms a noble estuary, terminating in Storm Bay. It varies in width from its entrance to Hobart-town from 6 to 12 miles, having every where deep water, without rocks or sandbanks, and is navigable at all seasons with perfect ease and safety. Its principal affluents are: the *Nive*, the *Dee* from *Echo Lake*, a small circular basin; the *Ouse*, joined by the *Shannon* from the *Clarence* or *Great Lake*, a large and beautiful mass of water in Westmoreland county, about 150 miles in circumference, following the winding of its shore; the *Clyde* from *Crescent Lake* at the foot of Table Mountain; the *Jordan* from *Lake Tiberias* in Monmouth county, 30 miles N. of Hobart-town; all on the left. On the right it receives no important affluent, that side of its bed being bordered by a continuous series of hills, which pour down only small streams, with short and rapid courses.

The *Huon* flows from *Peder Lake*, at the foot of the Frankland hills, and forms a fine estuary which opens into D'Entrecasteaux channel, south-west of Hobart-town.

The *Tamar* is a long estuary formed by the junction of the *North Esk* and the *South Esk*, at Launceston, and extending northward to Bass's Strait. It is navigable to Launceston, but requires great skill and management to take up or down large vessels with safety, on account of a bar and other intricacies. The *North Esk* and the *South Esk* have their sources in the hill country eastward of Launceston. The principal affluent of the latter is the *Macquarrie* from the *Nineteen Lagoons* in Somerset county.

Along the north coast are: *Piper's River*, to the east of the Tamar, the *Rubicon*, *Mersey*, *Don*, *Forth*, *Leven*, *Blythe*, *Emu*, *Cam*, *Trut*, *Duck*, *Montague*, *Welcome*, all to the west. On the west coast: the *Arthur* and *Hellyer*; *Pedder*; *King's River*; the *Gordon*, which runs into Macquarrie Harbour; the *Davey*. On the east coast is the *Prosser*. Besides the lakes already mentioned, there are *Lake Sorell*, a large round basin, near the middle of the island; *Arthur Lakes*, two large masses of water a little to the north-west of Lake Sorell, and which are connected by running streams with each other and with *Wood Lake*, a small basin to the south; their outlet is *Lake River*, an affluent of the Macquarrie; *Petrarch Lake*, whose outlet, the river *Curier*, flows to Lake St. Clare; *Edgar Lake*, whose outlet is one of the feeders of the Huon river.

BAYS, GULFS, &c.—Besides the estuaries of the Derwent and the Tamar, there are numerous other bays and harbours which afford secure anchorage. *Storm Bay* is a large open gulf on the south-east coast, between Tasman Peninsula and Brune Island. It terminates inland with the *Derwent*. *Frederick Henry's Bay*, and *Norfolk Bay* or *Port Buache*. Inside of the Derwent is a land-locked gulf named *Ralph Bay*. *D'Entrecasteaux Channel* extends upwards of 40 miles in length, between the main land on the west, and Brune Island on the east side, which divides it from Storm Bay. It forms a navigable passage to the Derwent, with the mouth of which it communicates by a narrow strait. On its west side are the estuary of the *Huon* and *Swan-Port*, *Esperance Bay* or *Adamson's Harbour*; *Seal-Port* or *Muscle Bay*, and *Recherche Bay*. On the east side of Brune Island is *Adventure Bay*, a large open gulf; and, at its south end, *Bad Bay*. On the west side of Tasman's Peninsula is *Wedge Bay*.

on the south side, *Port Arthur*, the penal station of the colony; on the east side, *Fortescue Bay*, and *Monge* or *Pirate's Bay*. Farther north, and along the east coast of the island, are: *Frederick Hendrick's Bay*, *Marion Bay*, *Prosser's Bay*, *Spring Bay* or *Port Monbasin*, *Grindstone Bay*, *Little Swan-Port*, *Oyster Bay*, a large open gulf between the mainland and a long peninsula terminating with *Geographe Strait*, which divides it from Schouten island; the *Great Swan-Port*, at the head of Oyster Bay; *Thouin Bay*, on the east or outside of the peninsula; *George Bay*, *Anson Bay*, a river. On the north coast: *Ringarooma Bay*, *Port Dalrymple*, the mouth of the Tamar; *Port Sorrel*, *Port Frederick*, *Emu Bay*, *Freestone Cove*, *Pebbly Bay*, *East Bay*, and *West Bay*, on the opposite sides of the isthmus of Circular Head; and *Duck Bay*. On the west coast: *Studland Bay*, *Macquarrie Harbour*, a large land-locked basin, 22 miles in length, and from five to seven in breadth, with a narrow entrance to the north-west; *Port Davey*, a deep indentation of the south-west coast, with *Cockburn Cove* on the one side, and *Bathurst Harbour* on the other.

ISLANDS, ROCKS, PENINSULAS.—*Bruné* or *Bruni Island*, between Storm Bay and D'Entrecasteaux Channel is 35 miles in length, but very narrow, and consists of two peninsulas joined by a very narrow isthmus. *Betsy Island*, and *Ironpot Island*, two islets near the mouth of the Derwent. *Tasman's Peninsula*, 27 miles in length by 16 in breadth, on the east side of Storm Bay, is connected by a narrow isthmus with a smaller peninsula named *Forrestier*. This peninsula is now the penal station of the colony; the principal settlement of which is at Port Arthur; and a strong military guard is kept at the isthmus which connects Forrestier with the mainland. Off the south-east point of Tasman's Peninsula is the small island named *Tasman's Island* or *The Pillar*. *Maria Island*, on the east coast, 13 miles long, consists of two peninsulas, in the most northerly of which is a mountain mass, named the Bishop and Clerk, rising 3000 feet above the level of the sea. Off the north point is the *Isle du Nord*, or *Green Island*; and between Maria Island and the mainland, is *Lachlan* or *Middle Island*. *Schouten Island*, at the south-east side of Oyster Bay. Off its south point is *Taillifer Island*; and opposite the mouth of Oyster Bay is the *White Rock* or *Seal Island*. *King George's Rocks*, *Black Rocks*, *Swan Isles*, *Furneaux's Islands*, and *Kent's Islands*, lie off the north-east coast, in Bass's Straits. The largest of Furneaux's Islands, named *Flinders* or *Great Island*, is now the abode of the small remnant of the natives of Van Dieman's Land, who have been transported to it by the Colonial government. *Waterhouse Island* and *Little Island*, on the west side of Ringarooma Bay. *Hebe Reef*, at the mouth of Port Dalrymple. *Circular Head*, a peninsula projecting 7 miles, near the west end of the north coast. *Hunter Islands*, a group of large islands off the north-west point of Van Dieman's Land; and named *Barren Island*, *Albatross Island*, *Three Hummock Island*, *Walker's Island*, *Robbin Island*, *Perkin's Island*, *Petrel Isles*, *Penguin Island*, *Stack Island*, *Harbour Island*, *Long Island*, *Short Island*, *Trefoil Island*, *Sheephead Island*, *Black Rock*, &c. *King's Island*, a large island in the middle of the western part of Bass's Strait. *Pyramid Island*, on the north side of Point Hibbs, on the west coast. *De Witt's* or *Maatsuiken Islands*, *Needle Rock*, and *Isle du Gotte*, on the south coast, between South Cape and South-west Cape.

CAPES.—On the north coast: *Circular Head*, a mass of basalt, exactly resembling a huge round tower or fortress; *Rocky Cape*, *Table Cape*, *Westhead* of Port Sorell, *Point Flinders*, *Five-mile Bluff*, *Stoney Head*, *Double Sandy Point*, *Waterhouse Point*, and *Cape Portland*. On the east coast: *Eddystone Point*, *Grant's Point* and *St. Helen's Point*, both at the entrance of George River; *Cape Lodi*, *Cape Tourville*, *Cape Forrestier*, *Cape Degerando*, and *Cape Sonnerat*, on the east, outside of Oyster Bay; *Cape Bailli*, *Cape Bougainville*, *Cape Bernier*, *Cape Frederick Hendrick*, *Cape Surville*, *Cape Peton*, the most southerly point of Maria Island; *Cape Pillar*, the south-east, and *Cape Raoul*, the south-west point of Tasman's Peninsula; *Cape Frederick Hendrick*, *Fluted Cape*, a beautiful mass of basaltic columns, which rise like the barrels of an organ, and *Tasman Head*, on the east side of Bruné Island; *Cape Bruné*, the south-west point of the same island. On the south coast: *Whale Head*, *South Cape*, and *South-west Cape*. On the west coast: *Cape Grim*, *Green Point*, *West Point*, *Bluff Point*, *Ordnance Point*, *Sandy Cape*, *Cape Sorrel*, at the entrance of Macquarrie Harbour, *Point Hibbs*, *High Rocks*, two peninsular promontories, and *Rocky Point*.

GEOLOGY, &c.—Trap is believed to form the principal substratum of the island. All along the coast it presents itself in precipitous rocky heights standing on beautiful columnar pedestals; and, in the interior, Mount Wellington, the Western Table Mountain, and the precipitous banks of many of the mountain streams are composed of it. In some places the columns appear in isolated masses, springing up at once from the surface, like obelisks or huge needles, and present a very singular appearance. Argil appears in the form of excellent roofing slate; and in the form of mica it is found in large masses on the rocks around Port Davey, where it is so much worn by the weather as to assume the appearance of snow. Excellent sandstone for building is found in almost every part of the island; flints in great plenty are scattered on the hills; and other species of silicious matter are found in various places, as hornstone, schistus, wood-opal, bloodstone, jasper, and cat's-eye. Limestone and marble likewise abound, and indications of coal have been found all across the island, from South Cape northward by Hobart-town, Coal River, Jerusalem, Jericho, and other places. Iron ore is also very generally diffused, some of which affords 80 per cent. of the metal; specimens of red and green copper ore, lead, zinc, manganese, and, as some say, of silver and gold, have occasionally been met with. Fossil vegetable remains, entirely converted into silicious matter, and capable of the finest polish, are occasionally found in different places, and we have seen specimens of wood converted into a sort of ironstone, from the bed of the Tamar. The soil is very various; being in some places a rich black alluvial mould, in others, sandy or argillaceous. It produces excellent crops, and may be cultivated for a succession of years without rest or manure.

CLIMATE.—Making allowance for the higher southern latitude, and the greater coolness and humidity arising from its insular position, the climate of Van Dieman's Land is not very different from that of the settled maritime parts of New South Wales. Generally speaking, throughout the summer the atmosphere is cooled by alternate land and sea breezes, the influence of the latter of which is felt at the

distance of many miles from the shore. The average height of the thermometer is 70°, though it occasionally rises to 100°, or even 110°, when a parching hot wind blows from the north or north-west; but this high temperature seldom lasts long, and the rain which always follows it, soon cools the atmosphere. Thunder storms are not frequent, and are never violent. September, October, and November form the spring, when the weather is usually bright and clear, but with occasional rain and high winds. The thermometer during these months has an average range from 50° to 60°. December, January, and February, are the summer months. In general very little rain falls during this season, and the vegetable productions of the earth arrive at maturity about a month earlier than in England. March, April, and May are the autumn, and by far the most pleasant season. The atmosphere is then clear and bright; and the sky is free from clouds and vapours. The average heat is about 65°, and the nights are cool and refreshing. June, July, and August form the winter. In the interior, particularly on high and exposed situations, frosts are sometimes severe; and a good deal of snow falls, but it never lies throughout the day. The winter, indeed, is contemplated by the colonists as a season of moderate and genial rain, which prepares the earth for the ensuing spring, rather than as the cold and dismal season of higher latitudes. The average range of the thermometer is from 40° to 48°; but it sometimes falls for a day or two several degrees lower. The seasons, however, appear to undergo a change every nine or ten years, but varying in intensity every third series or thirty years. But, as a general rule, it may be affirmed that the atmosphere is extremely dry and elastic, and contains a greater proportion of oxygen than in most countries of the old world. It is in consequence very salubrious and fecundating to both animal and vegetable life. In 1839–40, however, the colony was visited by a virulent typhoid fever, which seems to have originated in the gaols.

VEGETABLE PRODUCTIONS.—The vegetable productions are much the same as in the contiguous portions of New South Wales. In many parts of the island there is no underwood; only scattered trees are found shooting up to a great height. Much of the timber is very serviceable, particularly the stringy-bark, gum-trees of several sorts, peppermint wood for building; huon-pine, black and silver mimosas, pencil cedar, and sassafras for interior fittings and cabinet-making. Among the ornamental woods are light-wood, she-oak or beef-tree, honey-suckle, myrtle, and the cherry-tree. All the trees are evergreens, and some of them, particularly the mimosas, put forth very rich blossoms in spring. The foliage, however, is generally dark or sombre green, without any of the agreeable variety presented by forests of deciduous trees. The species and varieties of shrubs and plants are numerous and beautiful; and among the most valuable yet discovered in the island may be enumerated the pepper-tree, the bark of which has been proved to possess many valuable medicinal qualities; and the tea-tree, the leaves of which serve as a substitute for the tea of China. All the cerealia, and every sort of fruit, herb, or vegetable that grows in England thrives equally well in Van Dieman's Land. The vine also arrives at perfection in favourable situations, particularly in the northern districts; and a good imitation of hock is produced in the neighbourhood of Launceston.

ANIMALS.—These also are much the same as in New South Wales. There are three species of kangaroo, differing principally in size; the hyæna-opposum or tiger, which is very destructive to the flocks; and another animal called the devil, of the same species, which is extremely ugly, untameable, and also destructive to the flocks. There are also porcupines, wombats, duck-bills, and wild cats, which destroy the poultry and young lambs; kangaroo rats and mice, opposums of several sorts, and bandicootes, which prey on the potatoe crops. The birds are of various species, and many of them of beautiful plumage; as emus, cocatoos, parrots, parroquets, magpies, the laughing jackass, eagles, hawks, kites, ravens, and crows; gulls, pelicans, king-fishers, black-swans, wild ducks, musk ducks, teal, widgeon, quails, snipes, a species of pigeon of a splendid bronze colour, in flavour resembling a partridge, besides many others. There are several kinds of snakes, some of which are extremely venomous; guanas, lizards, centipedes, scorpions, tarantulas; many curious and beautiful beetles; three or four species of ants, some of which are an inch in length, and sting sharply; various sorts of spiders and musquitoes, and a numerous tribe of the insects which are common in all countries. European domestic animals all thrive well and increase in size; among them are European rats and mice, which have been unwittingly imported with other live stock, and have found their way to all parts of the colony. The inlets and bays around the island swarm with fish, as salmon, perch, rock-cod, bream, mullet, whitings, flatheads, leather-jackets, taylors, parrots, guard-fish, cray-fish, oysters, eels

skate, and shrimps; one of the most admired fish is called the trumpeter. The lakes and rivers abound with very fine eels; but other freshwater fish are of little note, except the mullet, of which considerable quantities are caught near the falls at New Norfolk. A sea-fish supposed to be a species of toad, and found on the coast, is strongly poisonous. The black whale, during the breeding season, resorts to the deep estuaries, bays, and inlets, and forms a profitable object of pursuit.

PEOPLE.—The aborigines belong to the Ethiopic class, and differ but little from those of Australia, with this exception that they have woolly hair, a perfectly black complexion, with the face and general appearance more nearly resembling those of the African negro. With respect, however, to mental capacity, they are considered to be inferior even to the Australians. They are now very few in number, and the race will probably soon become extinct. The European settlers consist partly of convicts and emancipists, and partly of free settlers, who have been rapidly pouring into the island during the last five-and-twenty years. The free population, in 1824, amounted to 3781 males and 2248 females; in 1838, to 14,692 males and 11,363 females. The number of convicts, in 1824, was 5467 males and 471 females; in 1838, 16,069 males and 2064 females. The military and their families, in 1824, amounted to 266 males and 70 females; in 1838, to 1171 males and 405 females. Total population in 1824, 12,643; in 1838, including aborigines, 45,846. Of the free population, in 1838, 16,094 were classed as belonging to the Church of England; 2551, to the Church of Scotland; 2288 Catholics; 1289 Wesleyan Methodists; 635 Independents; 175 Baptists; 132 Jews; and 80 Quakers. The educated British convicts are now all sent to Port Arthur, on Tasman's Peninsula; young male convicts are also sent there, and placed under teachers qualified to make them useful in several trades; colonial convicts, and prisoners re-convicted, are likewise removed to this great Penitentiary, where they are employed in felling, sawing, cutting, splitting, and loading timber; in building ships, prisons, barracks, &c.; shoemaking, tanning, and in various other ways. They are all subjected to the severest discipline and privations, the tendency of which is utterly to demoralize them, and make them recklessly ferocious. Hence murders among them are of frequent occurrence, without premeditation or cause.

GOVERNMENT.—The Government is precisely similar to that of New South Wales. The chief authority is vested in a lieutenant-governor and executive council, and in a legislative council. There is a supreme court of law with a chief judge and two puisne judges at Hobart-town; but the judges also hold circuit courts in other places.

PRODUCTIVE INDUSTRY.—About two-thirds of the population are employed in agriculture, or dependent on it; about one-third is engaged in commerce; and one-eighth, in arts and manufactures. In 1838, the total quantity of land in crop amounted to 96,639 acres, whereof 41,796 were wheat; 13,525, barley; 21,660, oats; 870, pease; 127, beans; 3548, potatoes; 9164, turnips; 17,760, English grasses; 443, tares. The produce in that year amounted to 551,285 bushels of wheat; 183,604 of barley; 251,491 of oats; 12,460 of pease; 1031 of beans; 11,533 tons of potatoes; 12,396 tons of turnips; and 15,992 tons of hay. The amount of stock, in 1828, was: horses, 2034; cattle, 84,476; sheep, 553,698; goats, 708. In 1838, horses, 9884; cattle, 77,153; sheep, 1,222,511; goats, 2624. The arts and manufactures are various but unimportant in amount, being chiefly confined to such articles as are of immediate necessity, or such as cannot bear the expense of importation, or cannot be conveniently exercised any where else, as brewing, printing, mills, tanning, &c.

The commerce consists in exporting the raw produce of the island, and importing the manufactured produce of other countries. The total value of both branches of trade, for the fifteen years from 1824 to 1838, are stated in the following table; together with the value of the two principal articles of export, whale oil and wool, and the amount of shipping and tonnage.

Year.	Value of Imports.	Value of Exports.	Vessels Inwards.		Vessels Outwards.		Value of Whale Oil Exported.	Value of Wool Exported.
			No.	Tonnage.	No.	Tonnage.		
1824	£62,000	£14,500	33	11,116	35	11,604	....	....
1825	88,161	23,837	52	13,455	54	12,435	....	....
1826	99,747	44,498	54	12,184	56	12,523	....	....
1827	152,627	59,902	97	18,893	91	16,004	....	....
1828	241,382	91,461	131	23,741	133	24,116	....	....
1829	272,189	126,984	110	24,717	111	25,742	....	....
1830	255,298	145,980	101	26,582	92	25,045	....	....
1831	298,774	141,745	94	23,184	102	25,451	....	....
1832	392,666	157,906	142	31,724	128	28,019	....	....
1833	352,894	152,967	167	37,442	159	36,250	....	....
1834	476,617	203,522	150	33,441	134	32,192	....	....
1835	583,646	320,679	234	55,833	225	53,560	£51,398	£142,921
1836	558,340	420,123	292	58,142	274	52,780	52,960	171,009
1837	563,144	540,221	344	60,960	363	57,945	68,757	220,739
1838	702,956	581,475	370	64,454	369	63,392	121,270	171,899

The circulating medium consists partly of specie and partly of the notes of the Derwent, Van Dieman's Land, Commercial, Union, Tamar, and Australasian, banks. The estimated amount of coin in circulation, in 1838, was £136,000; of bank-notes, £54,557.

DIVISIONS.—The settlements of the colonists extend chiefly through the middle of the island, from Port Dalrymple to Storm Bay; few have yet extended towards the east coast, and fewer still, if any, into the western districts. The middle and eastern portions of the island have been divided into the counties of *Kent*, *Buckingham*, *Monmouth*, *Pembroke*, *Glamorgan*, *Somerset*, *Cumberland*, *Westmoreland*, *Devon*, *Dorset*, and *Cornwall*; and these already are, or are intended to be, subdivided into hundreds and parishes.

TOWNS.—HOBART-TOWN, the capital, is a large, and in many parts, a neatly built town, on Sullivan's cove, on the right bank of the Derwent, about 20 miles from Storm Bay. The public buildings are numerous, and some of them commodious and handsome. There is only one English episcopal church; but there are several places of worship for other denominations, and the number is regularly increasing. The manufactories of the town consist of distilleries, breweries, tanneries, timber and flour mills, soapworks, and candleworks, &c. Around the town there are handsome villas and enclosures in every direction; and along the water's edge a noble wharf has been constructed, so as to allow vessels of the largest burden to lade or unlade close alongside. Hobart-town was founded in 1804. The population of the town and district in 1838 amounted to 14,382. Three miles north, on the main road to Launceston, is the pretty village of *Newtown*, remarkable for its elegant and picturesque villas, its race-course, gardens, fine fruit, and bay.

Launceston, 121 miles N. of Hobart-Town, and connected with it by a good road, is situate on a flat of the richest land in the island, backed by gently rising hills, at the confluence of the North Esk and South Esk rivers, which there form the Tamar, 45 miles from its mouth in Bass's Strait. It is a very thriving town, being the centre and the shipping port of a well-inhabited district; vessels of 500 tons come up to the town, and load and unload along the wharfs: the population of the town and district in 1838 amounted to 6136. *Georgetown*, at the mouth of the Tamar, on the right bank, is also a thriving town, where many vessels stop rather than encounter the trouble and the risk of going up to Launceston. In the interior there are several thriving country towns, as *New Norfolk*, on the Derwent, 22 miles above Hobart-town; *Brighton*, and *Richmond*, to the north of Hobart-town, on the east of the river; *Hamilton*, *Bothwell*, and *Grantham*, on the Clyde; *Oatlands*, 40 miles north of Hobart-town, *Longford*, *Perth*, and *Campbelltown*, both to the south of Launceston; *Westbury* and *Deloraine*, both to the west of Launceston; and *Llewellin*, to the south-east on the South Esk.

NEW ZEALAND.

SITUATION AND EXTENT.—This group of islands is situate in the South Pacific Ocean, between 34° 25′ and 47° 19° S. lat., and 166° and 179° E. long., about 1400 miles S.E. of New South Wales. It consists of two large islands and one smaller one, which extend in a line from north to south, about 1100 miles, including the width of the straits which divide them; but the breadth is extremely rregular, varying from 5 miles to 200. Their total area is estimated by some to contain 87,400, and by others, 95,000 square miles, or 55,936,000 acres, two-thirds of which are considered to be capable of cultivation. The most northerly island, named *Eaheinomawe*, is 540 miles in length; but the northern half of it consists of an extremely irregular series of peninsulas, no where exceeding the breadth of 50 miles, while some of the isthmuses are less than five, and one of them is only three miles across. The southern portion is more compact; its smallest breadth being 50 miles, and its greatest, about 200. The southern large island, named *Tavai-Poenamoo*, is about the same length, but is of a more regular form, and varies in breadth from 50 miles to 150. The most southern or small island, named *Stewart's*, is of a compact roundish form, measuring about 50 miles by 40. The coast line, following the various indentations of the land, probably exceeds 3000 miles.

GENERAL ASPECT.—The two large islands are traversed from N.E. to S.W. by a range of lofty mountains, skirting the south-eastern coast of the Northern Island, and approaching the west coast of the Southern Island, which are intersected by beautiful valleys, and watered by fine rivers. In the Southern Island some of the mountains are said to be continually snow-capt, which, in this latitude, would infer an elevation equal to that of the Alps; but they have not yet been explored, nor has their elevation been accurately ascertained. There are likewise several subordinate ranges of hills, and a few detached outlying mountains of vast dimensions, as Mount Egmont on the west coast, and Mount Edgecumbe, on the Bay of Plenty, both of which are volcanic, and exceed the elevation of 10,000 feet. In the interior several volcanoes are said to be in active operation; and the sides of the mountains in which they are situate contain deep and frightful caverns. A few of the smaller mountains are barren, or clothed only with fern, but the greater number are covered with magnificent forests, containing trees of enormous size, and embracing a great variety of species. Between the mountains and the sea, on both sides, is an immense extent of forest, plain, and pasture land, which is almost every where accessible by means of numerous fine bays and navigable rivers. The coasts of the Northern Island, however, are bounded by a belt of sand hills, within which a series of low flat lands extends for many miles, covered in summer with a reedy vegetation, and, in wet weather, converted into swamps. This forms altogether a large extent of territory, and contains in many instances some of the most valuable land in the country, requiring only to be drained, and redeemed from its present state of uselessness. Seaward, the whole west coast is beset by rocks or shifting barriers of sand.

BAYS, GULFS, AND STRAITS.—On the east side of the Northern Island: *Sandy Bay; Nanga-Ounou Bay; Doubtless* or *Oudou-Oudou Bay; Wangaroa Bay*, lat. 35° S., a beautiful, romantic, and spacious basin, capable of containing the largest fleet, and affording good anchorage in from 5 to 11 fathoms, completely sheltered from the sea and all winds. The entrance is only 200 yards wide, but there are no hidden dangers, and there is good anchorage outside. The shores are steep, with sufficient depth of water for any vessel within a few yards of them. The *Bay of Islands*, 35° 10′ S., so named by Cook from the number of rocks with which it is studded, is nevertheless a remarkably fine and capacious harbour, and affords shelter in all seasons and in any weather. Its entrance is 11 miles wide; there is deep water close to the shore, and it branches into several fine harbours; the two which are most used by shipping are the *Bay of Kororarika* and the river *Kawa-kawa*. *Wangarura*, *Wangamuma*, and *Tutukaka*, are three harbours fit only for small vessels, between the Bay of Islands and *Wangari Bay*, which is an extensive roadstead protected from north to north-east by Bream Head, and with soundings from 6 to 10 fathoms. The *Gulf of Shouraka* or *Houraka* is an open roadstead, with an entrance 16 miles wide, open to the north, and terminating southwards in the estuary of the river Thames. It contains two fine harbours, *Kaihu* in the bay of *Mahurangi*, and *Waitemata*, which is separated only by a narrow isthmus from the port of Manukao or Manukou, on the west coast. *Witi-angi* or *Mercury Bay*, is situate on the eastern or outside of the peninsula of Shouraka, and has a rocky entrance of difficult ingress and egress. The *Bay of Plenty*, a wide expanse of 130 miles, open to the north, between Shouraka and Cape Runaway, contains the harbour of *Tauranga*, a few leagues to the south of Mercury Bay, which is resorted to by small craft, trading for flax. *Taone-roa* or *Poverty Bay*, on the south-east coast of the Northern Island, 38° 45′ S. is in the form of a half-moon, surrounded by a sandy beach. *Hawke's Bay*, 30 miles farther south, a large open, and unsheltered expanse, between 39° and 40° S. lat. *Cook's Strait* divides the two large islands; its western entrance is 98 miles across; its eastern about 48, and the middle, or narrowest part, is 12. A little way within its eastern entrance, on the north side, is *Wangeneatera Bay*, or *Port Nicholson*, which extends inward 12 or 14 miles, with a breadth of from 2 to 4, affording safe anchorage and complete shelter for any number of vessels, and containing room to beat out in any wind. It terminates with a large, broad, and deep river. *Palliser Bay*, to the south-west, terminates in a large lagoon. On the west coast of the Northern Island: *Wharo*, an open roadstead, about 20 miles S. of Cape Maria Van Dieman, with good anchorage on a firm, tenacious sandy beach. *Whangapi*, 20 miles S. of Wharo, extends 6 or 7 miles inland, gradually widening, from 200 yards at the entrance, till it expands into a beautiful bay, measuring 6 miles by 3. Hills rise abruptly to a great height on both sides of the entrance, and are covered with forests; but round the bay, between it and the hills, there is a space of fine flat land, from a quarter of a mile to 2 miles in breadth, which is clear of wood. *Hokianga*, a beautiful estuary, 80 miles S.E. of Cape Maria Van Dieman, in 35° 32′ S. lat., and 173° 27′ E. long. extending inland about 30 miles, is deeply indented by small bays and creeks, and receives the waters of twenty rivers and streams, most of them navigable for boats and small craft, and sufficient for floating the largest timber. There is good anchorage for ships of 500 tons on all sides of the channel up to the head of the bay. *Kaipara Harbour*, 60 miles S. of Hokianga, has an entrance 5 or 6 miles wide, but expands into a fine bay from 25 to 30 miles in length from north to south, and sheltered from every wind. Opposite to the entrance there is a sandbank in mid-channel; but on each side of it there is a channel with abundant water to carry in a vessel of any tonnage at any time of the tide, the smallest depth being 10 fathoms at low water. *Port Manukao* or *Manukou*, 30 miles S. of Kaipara, has an entrance about a mile wide, which afterwards expands to a width of 20 miles; it is separated from the Gulf of Shouraka by an isthmus of only three miles across. *Waikato Harbour*, 25 miles along shore, south-east of the entrance of Port Manukou, is formed by the navigable rivers Waikato and Awaroa; one of the affluents of the former, the Horoteu, is said to flow from a large inland lake called *Roturoa*. The approach to the estuary is rendered difficult and dangerous by a bar, and there is no safe harbour inside. *Waingaroa*, a bar harbour, 25 miles south of Waikato. *Aotea Harbour*, 10 miles south of Waingaroa, has a winding channel two or three miles long, which expands to a bay 10 miles wide. *Kawia Harbour*, 10 miles farther south, is a bar harbour, but has a good clear channel, three quarters of a mile at the entrance.

In the Southern Island:—*Blind* or *Tasman Bay*; a large triangular indentation, with *Massacre Bay* on its west side; *Admiralty Bay*; *Port Hardy*, in D'Urville's Island; *Port Gore*; the *Current Basin*, a strait connecting Blind Bay and Admiralty Bay; *Queen Charlotte's Sound*, which extends inland for 20 miles, with an entrance 26 miles wide, but soon narrowing to ten; *Cloudy Bay*; all on the north coast of the island, and on the south side of Cook's Strait. *Looker-on Bay*, *Pegasus Bay*, on the north

side of Banks's peninsula; *Akaroa*, a remarkably fine and safe harbour at the south-eastern extremity of Banks's peninsula; *Otago Bay*, to the north of Cape Saunders; all on the south-east coast. *Foveaux Strait* between Tavai-poenamoo and Stewart's Island; *Knowsley Bay* or *River* an estuary on the north side of the strait, which extends inwards for about 100 miles. And at the south-western extremity of the island, *Port Preservation*, *Port Chalky*, and *Ducky Bay*. The shores of Stewart's Island form a series of excellent bays and harbours, but they are encompassed by a great number of small islands and rocks. The island possesses, however, the very fine harbour of *Port Pegasus*, on its south-east coast, equal in every respect to that of Sydney, and superior to it in this respect, that it has three safe entrances.

CAPES.—*Cape Otou* or *North Cape*, 24° 25′ 30″ S. lat., where New Zealand terminates in barren precipitous sandhills, called the *Reinga* or *Flight*; and where the foaming Pacific unceasingly dashes against the towering black rocks which skirt the shore. Westward from North Cape, and separated from it by a deep sandy bay which affords no anchorage, is *Cape Reinga* or *Maria Van Diemen*, so named by Tasman in honour of the daughter of the Governor of the Dutch East Indies. About six miles off the Cape N.N.E. is a dangerous ledge of rocks named the *Columbia Reef*, over which the westerly winds cause the surf to rise to a great height; but in fair weather they are unseen. *Knuckle Point*; *Point Surville*; *Point Pocock* and *Cape Brett*, both at the entrance of the Bay of Islands; *Cape Brown*, *Point Rodney*, *Aiguilles Point*, *Barrier Cape*, *Cape Colville*, *Point Charles*, *Cape Runaway*, *Cape Wareka-heka*, *Cape Wai-apou* or *East Cape*, immediately behind which rises a remarkable high land about 3000 feet above the level of the sea; *Cape Cable*; *Cape Table*; *Matamauri* or *Cape Kidnappers*; *Black Head* or *Cape Tupoko-poko*; *Cook's Turnagain*; *Castle Point*; *Point Tehouka-kore*; *Point Obtuse*; *Cape Palliser* or *Kawa-kawa*, a fine, high, bold point; all on the east coast of North Island; *Cape Toura-Kiva*; *Cape Poliwero*; both on the north side of the eastern part of Cook's Strait. *Reef Point*; *Woody Point*; *Albatross Point*; *Cape Egmont*; on the west side of North Island. *Cape Farewell*, *Point Lambert*; *Point Jackson*; *Cape Koamaroo*; and *Cape Campbell*; on the south side of Cook's Strait. Behind Cape Campbell rises Mount Tako, a lofty snow-capt peak, which is visible at a great distance, and serves as an excellent land-mark for making Cook's Strait on this side. *Cape Saunders*, on the south-east side of Tavai-Poenamoo; *Cascade's Point*; *Bald Head*; *Cape Foulwind*; and *Rocky Point*; all on the west coast of that island; *South Cape*, the most southern point of Stewart's Island.

ISLANDS and PENINSULAS.—*Manawa-tawa* or the three kings, 35 miles N.W. of Cape Reinga; *Didi-houa*; *Motourkawa* or *Caralle*; *Tawiti-rahi* or the *Poor Knights*; *Hen and Chickens* or *Morotiri*; *Taranga*; *Moko-hinu*; *Funal*; *Shoutourou*; *Otea*; *Aride*; all to the north of Shouraka Gulf. *Shouraka*, a large hilly peninsula, which forms the eastern side of that gulf. *Currier*; *Hausez*; *Court of Aldermen*; to the east of Shouraka. The *Mayor* or *Touhoua*; *High Island*; *Motiti*; *Plate Island*; *Moutohora*; *Pouhia-i-wakadi* or *White Island*, an insulated mountain, like Stromboli, which constantly emits smoke, and affords a beautiful spectacle by night, in the columns of fire which issue from the crater at its summit, in the Bay of Plenty. *Houama-kokeno*, to the south of East Cape. *Tera-kako Peninsula* forming the north-east side of Hawke's Bay. *Mana* or *Table Island*; *Entry Island*; *Gaimara Islands*; *D'Urville Island*; in Cook's Strait. *Banks's Peninsula*, projecting 42 miles from the east side of Tavai-Poenamoo, and connected with it by a low sandy isthmus, forms a high table-land which rises abruptly from the sea, white, and visible from a great distance. It has been taken possession of by a French colony. *Solander Islands*, at the western entrance; *Bench Island* and *Rouabouki*, at the eastern entrance of Foveaux Strait.

RIVERS and LAKES.—Of these nothing is known beyond what has been already mentioned in connection with the Bays.

CLIMATE.—The peculiar position of these islands, which lie north and south, gives a different degree of temperature to nearly every few miles of country; and, owing to the generally narrow width of the land, and to the almost uninterrupted chain of mountains which runs through their whole length, mists and exhalations, drawn from the surrounding ocean, overspread the country, imparting to it a constant humidity, which produces a luxuriant vegetation, and a constant supply of water to the numerous streams which flow through every valley. The climate of the Northern Island is uniform and genial. In winter the thermometer on the coast rarely falls below 45°; and, during the height of summer, seldom rises above 85°. At Queen Charlotte's Sound in the Southern Island, Captain Cook found the thermometer, in the middle of summer, not to rise higher than 66°; in June or midwinter, it never sunk below 48°. This agreeable temperature contributes much to the unusual vigour of the vegetation, which is chiefly composed of evergreens; and allows the agriculturist to raise annually as many crops of leguminous plants as he chooses. The rains throughout the year fall in moderate refreshing showers, particularly in Eaheinomawe; during winter, rainy weather predominates in Tavai-Poenamoo. Spring, summer, and autumn, are extremely pleasant; being attended with none of the overpowering heats and sudden changes of New South Wales. At these seasons the rains fall heavily, but seldom for more than two days together. In winter, the winds from the east or south-east are seldom unaccompanied by rain. Westerly winds are, however, the most prevalent. They commence in the forenoon, rising to a smart gale; but subside at sunset to a placid calm. The whole range of the west coast then becomes a lee shore, and on that account is little frequented by shipping, for the surf, dashing to a great height, renders approach to the harbours impossible; and equally prevents vessels from quitting them. The westerly gales are also frequently accompanied by heavy squalls, which render it almost impossible for a vessel near the land to preserve an offing. The sea rises in proportion to the wind; and yet these violent storms are accompanied by fair weather overhead. In Cook's Strait these heavy gales are of frequent occurrence, a circumstance which causes it to be avoided by ships. The neighbouring mountains of Kai-kohuda are overloaded with vapours; and not only

increase the furious force of the blasts, but alter their direction in such a manner that no two gusts follow from the same quarter; and the nearer the shore the more their effects are felt. The west and south-west winds blow almost without intermission from May till September. North winds are least frequent throughout the year; and seldom more than four violent gales are felt from that quarter during the season.

VEGETABLE PRODUCTIONS.—Among the most distinguishing characteristics of New Zealand are its splendid forests, in which trees of many varieties are often met with of amazing girth, and all flourishing with the most luxuriant vigour. Those of the pine tribe command the principal attention, from their towering height, without a branch protruding to destroy their symmetry. The Cauri or yellow pine, in particular, will challenge comparison with any trees of the pine family, in beauty or utility; and there are, besides, many other species. The palm tribes exist in great number and variety; supplejacks grow to a great length, and render the dense forests almost impassable; the heart of the delicious palms, called e'rito, is highly esteemed; the kourou is equally prized, and also the saccharine roots of the ti or cabbage tree. The fruits indigenous to the country are few, and of little value. The principal is the haraka-maori or native fruit, which grows in clusters, and is about the size and form of the Spanish olive; it is of a bright yellow colour when ripe. The tawara is a parasitical fruit which grows among the decaying branches of the rata and other trees; it has the form and whiteness of the head of a cauliflower, and is of a sweet yet acrid taste when perfectly ripe; but when unripe it is exceedingly bitter. The taro (arum esculentum) of several species, a very farinaceous legume, is planted in the islands, especially to the southward. There are likewise various other fruits; but the most valuable of these to the New Zealander, as an article of food, is the kumera or sweet potatoe, of which there are many varieties, and some of them very farinaceous. It is said by the natives to have been brought from Tou-wahai, or the distant regions, by their earliest ancestors; it is in consequence regarded with veneration, and has many superstitious legends attached to it. The European or American potatoe, first introduced by Cook, and many other European esculent roots, are now cultivated with success. The turnip is found in a wild state over the whole country, as also wild radishes, garlic, celery, cress, &c. Pumpkins are much cultivated, and grow to a large size. The vegetable marrow plant and calabashes are of great use for containing liquids; and gourds of every kind are now found in all the plantations. Indian corn grows to a large size; and wheat yields at the rate of 40 bushels an acre. Grapes are largely cultivated to the northward of the river Thames; strawberries and raspberries overrun the soil wherever they are planted; olives, pomegranates, figs, quinces, nectarines, peaches, apples, pears, and cape gooseberries, thrive in abundance. The sugar-cane flourishes in Hokianga, and several tropical exotics at the Horeké settlement. Flowering shrubs which require the shelter of the greenhouse in England are not affected by exposure to the open air throughout all the seasons of New Zealand.

Of the rohi or fern upwards of sixty distinct varieties have been noticed by botanists. It is found growing to the height of twelve feet; and plains and sloping grounds are often rendered impassable by its entangling fibres. But it never grows on bad land, and the quality of the soil is generally indicated by the size and strength of the fern which covers it, inferior land producing only a stunted and puny vegetation. When sown with English grasses the fern-land produces excellent pasture, and clover in particular grows luxuriantly. There are many shrubs with myrtle leaves; the tea plant, kaikatoa, covers the plains, not excepting the jutting headlands which are exposed to the fury of every gale. The ground in the vicinity of the roots of trees, which extend to a great distance in the forests, is carpeted with mosses and lichens of beautiful varieties, which flower twice a-year. Funguses of great size and hardness cover the decayed trees which block up the forest paths; while the bark of the live trees is covered with liands, flowering convolvuluses, lichens, mosses, and ivies. There are many species of laurel; of which we may mention the philanthus or seaside laurel, and a species of the retiring mimosa, or sensitive plant, sheltered by the drooping branches of the dwarf palm. The erithmum or samphire abounds near the shores which are washed by the tides; and sea-weed in great variety, the most common of which is the fucus filum or threaded sea-weed, which strews the coast, and has its roots in the corals and rocks in deep water. Nightshade and various nettles grow extremely large; there are, besides, many species and varieties of minor vegetation, all of which have the same undying appearance in winter as the forests. But the most valuable native plant is the flax (phormium tenax) which flourishes in great abundance, and chiefly in the vicinity of swamps. Of this plant there is a consider-

able variety, principally caused by difference of soil and climate: some flax plants to the northward scarcely attaining the height of six feet, while others in the south reach sixteen. In appearance it resembles the common flax. Of the leaves of this plant the natives make all their valuable apparel, with their fishing lines and every kind of cordage; and by merely splitting them into strips and tying them together, they construct their fishing nets and seines, some of which are of enormous size. It appears to be the strongest of all vegetable fibres, and possesses this advantage over hemp and European flax that it is of a brilliant whiteness, which gives it a satiny appearance, so that it does not require to be bleached. It is also a handsome and vigorous plant.

ANIMALS.—There are no quadrupeds indigenous to the country. There is a species of dog, named pero, which according to tradition was introduced into the country in remote times by a number of divinities (probably the Spaniards) who landed on their shores; but it has dwindled away to the lowest grade of the canine family, owing to its bad treatment by the natives. The puorka or hog has also become naturalized, and now abounds in a wild as well as domestic state throughout the islands, where the loose mould of the valleys forms no obstacle to its snout in grubbing up the roots of the fern and the succulent thistle, on which it loves to feed. Cats and rats have also been recently introduced, and are valued by the natives as good food; the former are also prized for their skins, so that Europeans cannot get their cats kept for the thievish native gourmands. Sheep have been introduced, but seem not to be adapted to the country otherwise than as food. Cattle, horses, and asses have also been introduced, and thrive well. Birds are numerous, but are generally small. Among there are mocking-birds, parrots, parroquets, cuckoos, in great variety; and wood-pigeons, which abound in the woods, and are delicious food; besides many others, whose native names it would be useless to specify. European poultry have been introduced, as the turkey, duck, and goose, which, however, the natives seldom use as food, preferring to dispose of them at high prices to shipmasters. Tropical birds of the palmipede genus, and sea birds of many varieties likewise abound on the coasts.

There are no noxious reptiles; but there are a few harmless lizards, and the gigantic lizard or guana is found principally in the large Southern Island. There are no serpents or snakes of any kind; but leeches, toads, and frogs abound in the swamps. Fleas and the namu or sand-fly are mischievously troublesome; musquitoes abound in the numerous swamps; there are also butterflies of various kinds, but not remarkable for beauty, with locusts, grasshoppers, dragon-flies, black ants, beetles, scorpion-flies, flesh-flies, gad-flies, American moths, snails, grubs, earthworms, caterpillars, spiders, and also scorpions and centipedes, which, however, are of very small size, and quite harmless.

The coasts formerly abounded with seals of every variety, but they have been almost extirpated by Europeans. Black whales also frequent the coast in vast numbers in the winter season, or from May till September; and at a moderate distance from the land the sperm whale is occasionally found in large herds. There are also sharks, pilot fish, flying fish, and the hammer-headed shark, which appears in great shoals, and is preserved by the natives as winter food. Both the sea and the rivers abound with fish in great variety, and equal in taste and flavour to any in Europe. There is also abundance of lobsters, crawfish, oysters, prawns, shrimps, clams, poppies, mussels, limpets, and cockles. Some gigantic mussels grow to a foot in length, and are found in mud banks at low tide. There are also various zoophytes, madrepores, medusæ, which are found in large glutinous masses at the edge of the tide.

PEOPLE.—The New Zealanders form one of the finest branches of the Malay family, and embrace several varieties. Captain Crozet divides them into three classes: white or copper-coloured, brown, and black; but properly speaking, the colour varies only from the olive tinge of the southern Europeans to a brown black. The olive or copper-coloured race are a noble people, being often above six feet in stature, muscular, and active. The higher classes are amply chested, remarkably well formed, and of dignified appearance. Their countenances are often very pleasing; their hair is glossy, black, and curling; and their features approach the European standard. The lower classes, and particularly the natives adjoining the East Cape, are short in stature, with lank or frizzly hair, a brown complexion approaching to black, and a bad expression of countenance. The females of the latter class differ but little from the males in appearance, but the ladies of the upper class are quite different, and many of them would grace a page in "the Book of Beauty." The difference between the

distinct races which have inhabited the country is more remarkable in the women than in the men. Those of Malay origin are easily distinguished from the Papuas; but the flat nose, full lip, and projecting mouth of the latter are but rarely seen. In both races the female stature is less than the male. The features of the women are generally regular; the hair is often jet black, long, and profuse; and the teeth extremely white. The forms of the women are elegant and interesting; but marriage, and the servitude with which it is accompanied, cause early old age and decay.

The character of the New Zealanders exhibits, with great boldness of relief, many both of the virtues and the vices of the savage state. As individuals they are remarkable for a vigour of mind and a forethought, which distinguish them from all other savages who have made so little progress in the arts of civilized life; while their discernment in appreciating the advantages of civilization, is not greater than the energy and self-denial which they manifest in the pursuit of distant advantages. As a community, they are chiefly remarkable for the ferocity which they exhibit in the perpetual wars which ravage the country; for that contempt of human life which seems to be the natural result of a species of warfare that aims at the extermination or captivity of enemies; and for the practice of eating the flesh of the enemies they have slain, and even of their own slaves when pressed by hunger. The New Zealander's point of honour is revenge, and this he pursues in spite of danger and difficulty, encountering every fatigue, and submitting to every privation in pursuit of his object; and he would be disgraced among his tribe were he to allow the spirit of his friend or relation to remain unappeased by the blood of his enemy. With this is united a nice feeling of honour on other points that concern his dignity, which leads him immediately to perceive and resent any slight or insult offered to his person. But he is not more distinguished for ferocity and cruelty to enemies, than for a strength of attachment to his tribe and kindred, which dissolves the savage warrior in tears on the neck of his friend, whom he meets after a long separation; nor is he less susceptible of gratitude for kindness, than of resentment for injury.

The New Zealanders are ignorant of some of the commonest arts; their clothing is rude, and their agriculture imperfect; they have no knowledge of metals, or of writing; and yet they exhibit the keenest sense of the value of those acquirements which render Europeans so greatly their superiors. There is a natural politeness and dignity in their deportment, a love of poetry, music, and the fine arts, and a wit and eloquence that remind us of the Greeks of Homer. Their language is rich and sonorous, abounding in nice distinctions; it is radically the same with that of Tahiti and other Polynesian islands, and has been reduced to writing by the missionaries. They have abundance of poetry of a lyrical kind, and are passionately fond of music. They excel in carving, of which their war canoes are fine specimens; they display their talents also in astronomy, having given names to the stars, and divided them into constellations; and they spend great part of the summer nights in watching their motions; but they have connected with them some curious traditions, which they hold in superstitious veneration. They are quite free from idolatry, and have many just and admirable notions of God, whom they call Atua, and believe to be a spirit infinite and eternal, governing the world by his providence. They believe in a future state of existence. They believe also in an evil spirit or devil, whom they call Wiro, and to whom they attribute all the evils which befall them. They have also priests among them; but, as there are no idols to worship, these are rather teachers than priests; though they are employed to baptize and name the children.

The number of the population cannot be ascertained with any degree of accuracy; but it is loosely estimated to amount to 160,000, of whom at least 100,000 are in the Northern Island. They are divided into a great number of petty tribes; and no general dominion seems ever to have prevailed over any great portion of the country. But property in land, and the sovereign rights of their chiefs are well established institutions. They have no towns, and their villages are mere collections of huts; though some of them are strongly fortified with palisades.

DISCOVERY AND COLONIZATION. — New Zealand was first discovered by Tasman, the Dutch navigator, in December 1642; but he seems only to have touched at the northern point. It was not visited again till 1769, when Captain Surville touched at a bay on the north-east coast; and Captain Cook sailed round all the islands, and passed the strait which now bears his name.

In 1814, the northern part of the Northern Island began to be the resort of ships engaged in the whale fishery, and men occasionally deserted from their ships and took up their residence among the natives. About the same time, a few of the natives occasionally made their appearance at Port Jackson, and being seen and conversed

with by the Rev. Samuel Marsden, he conceived the idea of establishing a mission in the islands, which he accordingly visited for the purpose; and although not immediately successful, the ultimate establishment of a mission was the result. Since that period, the Wesleyan Methodists and the Catholics have established missions, all of which have of late years extended their influence, bringing the natives into familiar intercourse with the Europeans, and generally promoting their civilization, in spite of some questionable practices on the part of the church missionaries, which have brought them somewhat into disrepute. But the missionaries are not the only white men to whose influence the New Zealanders have been subjected; other settlers of a very different class, the very outcasts of a depraved population, have found their way to the country. Convicts who escaped from the penal settlements; runaway sailors from whaling ships; needy adventurers, whose improvident habits and evil courses had made them men of no country; with a small admixture of worthy and energetic men, such as will find their way into all eligible fields, but who formed too inconsiderable a minority to curb and neutralize the bad passions of the majority, formed the bulk of the European population in 1839. In 1836, an association was formed in London for the express purpose of colonizing these islands; but having failed in their object of engaging the Government and Parliament in their cause, the association became virtually dissolved; and instead of it a joint-stock company was formed for the purpose, which, early in 1839, became possessed, by purchase, of some extensive tracts in the Northern Island. More lately their agent in New Zealand acquired for the company the whole of the territory on both sides of Cook's Strait, including Port Nicholson, where they have since formed their principal settlement, and founded the town of Wellington. The attention and business of the company is "confined to the purchase of tracts of land, the promotion of emigration to these tracts directly from the United Kingdom, the laying out of settlements and towns in the most favourable situations, and the gradual re-sale of such lands according to the value bestowed upon them by emigration and settlement. It is also proposed, that to facilitate the transmission of capital between England and New Zealand, the company shall act as agents for that purpose only." The first colony consisted of 1125 persons, of a very select class, including several persons of birth, education, and refinement; but having been landed in the country without any provision being previously made for their reception, they have had to endure such hardships as have disgusted many of them, and occasioned grievous complaints.

Neither the New Zealand Association of 1837 nor the New Zealand Company of 1839 could gain the sympathy or even the countenance of the Government. By the energetic operations of the latter body, however, the Government were forced into action; and just as the first colony was ready to start, Captain Hobson of the navy was sent to New Zealand for the purpose of ultimately erecting it into a British colony. Unfortunately, New Zealand, or rather the northern portion of the Northern Island, had been treated in 1831 as a sovereign independent state, and Captain Hobson was instructed to begin by calling himself *consul*. He was then to obtain a cession of the sovereignty from the chiefs, and to declare so much of the country as should be ceded to him, and also such part thereof as should be in possession of British subjects, a dependency of New South Wales. Of this portion he was to cease to call himself *consul*, and was to become lieutenant-governor under the governor of New South Wales. In other words, New Zealand was treated as a foreign country, over which her Majesty could have no authority, until it should be obtained by formal cession, from the date of which sovereignty, with all its consequences, would commence. From this course of policy much difficulty has since arisen, and more will yet arise. It is a well-understood principle of international law, that discovery and occupation give to the discovering nation a right of sovereignty *as against all* civilized powers. The relations which the discovering country may establish with the native tribes does not in any way affect this right of sovereignty. The Americans, for instance, recognise a certain modified sovereignty as continuing in the Cherokees and other aboriginal tribes, but they nevertheless assert the sovereignty of the union as against all European nations. Of our original sovereignty over New Zealand no one ever doubted, until it was lately repudiated or renounced by the colonial department. Acts of sovereignty had frequently been exercised. Magistrates had been appointed; criminals had been arrested, sent to Sydney, tried, and punished many years ago; and yet it was determined that Captain Hobson should take a new lease of sovereignty, dating from a first cession or cessions from the natives. One of the consequences of this was, that New Zealand, which had all along been respected by foreign powers, was immediately thrown open to colonization by any European

power. France at once took the hint, and sent out the Comte de Paris transport with about sixty settlers, to found a French colony there. This expedition was only twenty days too late to take possession of the Southern Island in the name of France; Captain Hobson having at last, in May 1840, issued a proclamation, declaring the sovereignty of Britain over both islands, and thus anticipating the French.

The New Zealand Company have settled their first colony at Port Nicholson, which is described as one of the finest harbours in the world; and they expect that the town of *Wellington*, which they have founded there, will become the great commercial metropolis not merely of New Zealand, but of the whole of Australasia. The Bay of Islands is, however, the place which, above all others, appears to have been destined for the seat of a great commercial city. It combines every advantage which could be wished for supplying the wants of a large population, while it is at all times easily accessible for shipping. *Kororarika* is acknowledged to be the best harbour in the bay, and has the safest anchorage. The town already contains a fine church, and a great many houses, and is surrounded by an amphitheatre of gently swelling hills, from which flow several beautiful streams. There is to be a town named *Churchill*, at Hokianga; one named *Auckland*, at Waitemata harbour, on the Thames; and one named *Russell*, on the Bay of Islands. The New Zealand Company have also sent out a second colony, whose settlement is to be called *Nelson*.

In the great ocean to the south-east and south of New Zealand are several smaller islands. The *Chatham Islands*, 420 miles E.S.E. of Cape Palliser, were discovered in 1791 by Lieut. Broughton, the largest of which is about 36 miles in length, of a compact form, well wooded, and abounds in flax. The others are considerably smaller, and are named the *Two Sisters*, *Pyramid*, and *Cornwallis*. The group extends 120 miles from S. E. to N., between 43° 38′ and 44° 40′ S. lat., and 177° and 179° W. long. The inhabitants are a branch of the New Zealand family, and speak the same language. The *Bounty Isles* were discovered by Captain Bligh in 1788; they are thirteen in number, within a space of three miles and a half, in 47° 44′ S., and 176° 47° W. long. *Antipodes Island* was discovered in 1800 by Captain Pendleton of the sealing vessel Union, who gave it this name from its being the nearest land to the antipodes of London. It is situate in 49° 40′ S., 177° 20′ E. *Campbell's Island* was discovered in 1810, in 52° 43′ S. lat., 167° 2′ E. long. It is 30 miles in circumference, with a rocky coast, rising in the interior into peaks of considerable height. The *Auckland Islands* were discovered by Captain Bristow in 1807. They are situate in 50° 40′ S. lat. 164° E. long. The principal island is 20 miles by 8, with an elevated coast, and a lofty mountain, visible for 50 miles in clear weather. The smaller islands are named *Enderby*, *Disappointment*, and *Adam's Islands*. They are well covered with vegetation, and the forests contain trees of large size, and of a variety of species. The only quadrupeds are rats; but there are many beautiful birds, and the coasts abound with fish. The *Macquarrie Islands* were discovered in 1811, the principal of which is 19 miles long, by 6 broad, and contains two open anchorages. At a little distance north are two rocky islets, named the *Judge* and *Clerk*, and to the south, other two similar islands, named the *Bishop* and *Clerk*. The middle of the group is situate in 54° 39′ S., 156° 21′ E. long.

NEW GUINEA, &c.

NEW GUINEA is situate to the north of Australia, from which it is separated by Torres' Strait, between 0° and 10° S. lat. and 131° and 149° E. long.; being about 1100 miles in length, by 330 at its greatest breadth. It is of an irregular form, the western part being indented by deep bays, which almost cut it off from the more compact eastern portion. It is generally remarkable for its great elevation above the level of the sea; the northern coast in particular is high and mountainous. It is described, however, as being every where a rich and magnificent country, and probably contains the most precious vegetable productions of the Asiatic Islands. But no European colonists have hitherto settled on its shores; and no traveller has yet explored the interior. The only quadrupeds that are known to exist in the island are dogs, rats, and wild hogs; but the birds are of great beauty and variety. It is the original habitat of the beautiful birds of paradise. The people are of the Malaysian negro, or Puapuan race, and are invariably described by voyagers as hideously ugly, with large eyes, flat noses, thick lips, woolly hair, and a black shining skin. This natural ugliness they increase by passing bones or pieces of wood through the cartilage of the nose, and frizzing out their curly locks like a mop to an enormous size. They appear, however, to be somewhat farther removed from extreme barbarism than the Australians, for they have permanent houses, and both men and women wear wrappers round the waist. In the interior there are said to be some very miserable Haraforos, who live in trees, but cultivate the ground, and bring their produce down to the coast. The whole of New Guinea is indented with deep bays; and the coast is surrounded by multitudes of small islands, all peopled by Papuas, except those on the north-west, where Chinese and Malays have introduced themselves. The trade of the coasts is monopolized by the Ceramese, who have inspired the Papuas with an inveterate hatred of all other foreigners. The quantity of misoi or massoy-bark, nutmegs, trepang, tortoise-shell, pearls, edible birds'-nests, birds of paradise, and other articles of value, purchased by the Ceramese on the coast for an almost nominal price, and carried by them to Bali and Singapore, is incredible.

Off the south-west coast, at the distance of about 40 miles, and 100 miles N. E. of Timorlaut, are the *Arru Islands*, a group of some importance. They are small, rarely exceeding 6 or 7 miles in circumference, but so closely grouped that a number of them, when viewed from a distance, sometimes appear like a continuous land. According to Mr. Earle, they are hilly, but not mountainous, and the uplands are covered with trees; but, according to Captain Stanley, they are low and flat in appearance, and consist chiefly of a mangrove swamp, intersected by numerous chains, thickly wooded with fir trees. They are thickly inhabited by an industrious people, who seem to be a mixture between the brown and the black races of Malaysia. They are larger and more powerful than the Javanese and Malays; their hair is short and curled, but not woolly; their women are well treated; the majority are Pagans; but there are also many Christians and Mahometans. They are noted for their honesty, and are not easily offended. The islands are the entrepot for the productions of the neighbouring countries, and much commercial intercourse is maintained, chiefly with the Chinese, Bugis, and other native traders. Tortoise-shell, bees' wax, ambergris, massoy-bark, birds of paradise, trepang or sea-slug, and edible birds'-nests, are the principal exports. Fresh provisions and supplies for shipping may be procured in abundance. To the westward is another group, named the *Ki* or *Key* islands, the largest of which

is 45 miles in length, by 4 in breadth, mountainous and thickly covered with trees. Its highest point, near the centre, rises to the height of 3310 feet.

The remaining islands of Australasia, situate to the N. E. and S. E. of New Guinea, though some of them are of considerable size, are in other respects so unimportant, that it is sufficient merely to mention their names. They are mostly inhabited by varieties of the same negro races, except those to the S.E., where the negroes become mixed with the Polynesians. The principal of them are: the *Admiralty Islands*, *New Hanover*, *New Britain*, and *New Ireland*, to the north-east of New Guinea, from which they are separated by *Dampier's Strait*; *Louisiada*, a long chain of isles and reefs, extending to the eastward of the most easterly point of New Guinea; the SOLOMON ISLANDS, including *Bouka*, *Bougainville*, *Choiseul*, *Isabel*, *George*, *Guadalcanar*, *Gower*, *Arsacides*, *Buenavista*, *Rennel*, *San Christoval*, and many others; the NEW HEBRIDES, including *Tierra del Espiritu-Santo*, *Mallicollo*, *St. Bartholomew*, *Isle of Lepers*, *Santa Cruz*, *Duff Isles*, *Tabouai*, *Vanikoro*, where Perouse was wrecked in 1788, *Recherche*, *Mitre*, *Cherry*, *Tucopia*, *Bligh*, *Banks*, *Aurora*, *Pentecost*, *Apee*, *Sandwich*, *Frowango*, *Tanna*, *Hunter*, and *Walpole*; the LOYALTY ISLES; and NEW CALEDONIA. The last named island is 250 miles in length by 30 in breadth. It bears a great resemblance to New South Wales, consisting of barren rocky mountains, interspersed with fertile valleys; and many of the productions are similar. The people, however, are different, and are represented as strong, robust, active, and well made, courteous and friendly, and apparently a mixed race. Between New Caledonia and Australia is situate the *Coral Sea*, which is encumbered with shoals, reefs, and low islands.

III. POLYNESIA.

GENERAL DESCRIPTION.—This division of the world, as its name implies, consists of a great number of islands scattered over the Pacific Ocean, and extends from Asia, Malaysia, and Australasia on the west and south-west, to the wide open sea which washes the western shores of America. But, though innumerable, these islands, in respect of their general physical characteristics, may all be included under one general description. They are divisible into three classes; the mountainous, the hilly, and the low coralline. The islands of the mountainous class are, with few exceptions, truly splendid. The mountains rise gradually from their bases till their summits are lost amongst the clouds. Some of them are broken into a thousand fantastic shapes, and have their sides clothed with bright verdure of various shades. Beauty, grandeur, wildness, and sublimity are so fantastically blended and contrasted, as to excite the most varied and delightful feelings. The bases of the mountains are bordered by fertile and luxuriant valleys, adorned with stately bread-fruit trees, and many other tropical productions, some of which are of gigantic growth, and of the richest foliage, all equally beautiful, but each having its own peculiar hue, from the darkest shade of green to the lightest tint. The plumes of the cocoa-nut tree overtopping the whole, and waving majestically in the passing breeze, give an exquisite finish to the landscape. The mountains in the islands of this class have generally an elevation of from 2000 to 10,000 feet; in Hawaii alone they exceed 13,000. All of them exhibit evident traces of volcanic agency; in many the rocks are composed of a fine-grained black basalt; in others there are pumice and other stones of varied appearance, which have evidently undergone the action of fire; immense masses of conglomerated rubble are also met with. Whatever may have been their origin, it is evident that they must all have been under water; for on their loftiest summits, coral, shells, and other marine substances are found in great abundance. The islands of the second class are rather hilly than mountainous, being generally from 100 to 500 feet in height. They are in general equally beautiful in appearance, and equally luxuriant in their foliage with those of the first class; but are less sublime and romantic. The rocks consist of crystallized carbonate of lime, very much in appearance resembling the aragonite of the Giant's Causeway. The third class embraces the low coralline islands, most of which rise only a few feet above the surface of the sea. They are generally small; though Tongataboo is 100 miles in circumference. The soil upon them is in many places very thin, so that there is little vegetation besides the cocoa-nut trees, pandanus, some stunted hibiscus, with a few other trees of dwarfish growth, and a quantity of brushwood. Tongataboo, however, and all the Friendly Islands may be considered as exceptions; the soil there being much deeper, and every production of the islands of the first and second classes grows in them with luxuriant profusion. All the Society Islands, and also many others, are surrounded each with a belt of coral rock, from two or three to twenty yards in width, and situate at distances varying from a few yards to two miles from the shore. Against this barrier the long rolling waves of the Pacific are driven with terrific violence; and towering in one vast sheet to an amazing height, roll over their foaming tops with majestic grandeur. The waters of the lagoon, between the reef and the shore, are placid and transparent; the bottom and the sloping sides present a most enchanting picture; for coral of every varied shape and hue is seen intermingled in rich profusion, suggesting the idea of a submarine flower garden or shrubbery of exquisite beauty; while among the tortuous branches of the madrepore, and the wide-spreading leaves of other corals, the zebra fish and many others, of every colour and size, are seen gambolling in conscious security.—(*Williams' Missionary Enterprise.*)

The coral islands are classed as circular, flat, long-narrow, and those which encircle high land. The islands in the Dangerous Archipelago are all of the first class, and consist of strips or circular belts of coral from 400 or 500 yards to one mile across, and always inclosing a lagoon; they are seldom more than four or five feet above the water, and abrupt towards the ocean, which rapidly deepens on the outside to more than 120 fathoms. The islands themselves vary from 2 or 3 to 150 miles in circumference; the ring being often divided across by a fissure which permits ships to enter the lagoon. These are all the work of the coral insects, which are said to commence their labours at no greater depth than from 15 to 20 fathoms. The bottoms

of the lagoons are seen in calm weather at the depth of 100 feet or more, strewed over with shells and fragments of coral, rarely showing any living specimen below 16 or 17 fathoms, at which depth smaller reefs rise within the lagoon; and beyond it broken masses of rock may be seen without any living portion attached. Islands often occur of a flat or tabular form, generally oval or irregularly rounded; of which kind are most of the Friendly Islands. There are also many crescent-shaped reefs, having the convex side highest, which often show their position to the mariner only by the breaking of the waves over them, while the horns of the crescent gradually sink into the deep. In a few instances, however, as in Gambier's Island, they are high enough to be covered with vegetation and to be inhabited. Of those that form long narrow strips there is one called Tehuro near Tahiti; but the grandest example known is the *Great Barrier Reef*, which extends along the north-eastern coast of Australia, for more than a thousand miles, in the course of which space there is one continuous portion of more than 350 miles, with scarcely a break or passage through it. Of the last class of coral groups or reefs, those encircling high land, the Society Islands offer striking examples. These are mostly surrounded by reefs 400 or 500 yards from the shore, with a deep channel inside, containing numerous openings through which ships can enter, and afterwards anchor in perfect safety. These breaks are in most instances opposite the mouths of fresh-water rivulets. The islands of Raiatea and Otaha are enclosed in the same reef, the openings through which are in most cases marked by high and green points covered with cocoa-nut or other trees. Ships can enter at the windward side and get to sea again through the leeward channels, by passing through the strait which separates the islands. But of all these varieties of coral islands, the form must very materially depend on that of the base on which they happen to be reared; hence their circular, crescentine, oval, or irregular forms denote the shape and even the nature of the subjacent rocks. In most cases the bases of the small islands appear to be volcanic craters, either entire or broken; islands of volcanic rocks, as Tahiti, are surrounded by rings of coral; but the elevation of the coral islands seems to be owing not merely to the accumulation of matter produced by the rough action of the sea, but to a gradual rising of the low islands, and a violent subterranean movement of the high ones, like Tahiti, which bears on the top of one of its highest hills a distinct and regular bed of half fossil coral; and near it, but on a lower level, a volcanic crater with two lateral gorges.—(*Phillips's Geology*, p. 308–10.)

CLIMATE AND NATURAL PRODUCTIONS. — The greater part, and indeed almost the whole of these islands being within the tropics, the climate is necessarily warm, and little varied; the heat, however, is delightfully tempered by the presence of the vast body of water by which they are surrounded, and their climate and physical characteristics altogether may be said to justify the descriptive accuracy of the following lines:—

> "And, glittering in the sun's bright beams,
> Places there are where Ocean smiles,
> Meandering in a thousand streams,
> Among as many blooming isles:
> Seeming to the delighted eyes
> On earth a heavenly paradise."

But it is the smile of a giant who is not always *pacific;* for he sometimes rises in anger, and dashes with tremendous fury on the rocky barriers of the blooming islands, which are saved from destruction only by the labours of their tiny architects. The vegetable productions are, of course, all tropical; and the soil of the volcanic islands in particular is so fertile as to produce spontaneously in abundance, almost every thing necessary for the support or the enjoyment of man. The principal products are: the bread-fruit tree, of which there are many varieties, and the fruit of which affords a nutritive food, while the trunk supplies timber for buildings and canoes, a gum which serves for pitch, and a species of bark which is manufactured into a substantial cloth; the cocoa-nut tree, which supplies meat, drink, cloth, and oil; plantains and bananas of many sorts; yams and sweet potatoes; taro-root; sugar-cane, and various other edible roots and fruits. The only quadrupeds found on the islands when first visited by Europeans were hogs, dogs, and rats; but birds were numerous, consisting of poultry, pigeons, turtle-doves, parrots, tropical birds, &c. The shores abound with sea-fowl, and the sea teems with excellent fish, swimmers as well as crustacea, and mollusks, which the natives capture with great dexterity.

PEOPLE. — The Polynesians seem to belong to the Malay variety of mankind, and a general resemblance pervades them all; somewhat modified, of course, by the

circumstances of climate, occupation, and habits. Their persons are generally short, squat, and robust; their lower limbs large and heavy; their arms fleshy; their hands and feet small; their face somewhat of a lozenge shape, the forehead and chin being rather sharpened, but the cheekbones high and broad, with hollow cheeks. The eyes are black, small, narrow, and obliquely placed, like those of the Chinese; the nose broad, but not flat; the nostrils open and circular; the mouth rather wide; the hair lank, coarse, and black. Their complexions are of various hues of brown, generally olive or light copper, but making in some cases an approach to white or black. Every where they follow the same custom of marking their skins with indelible figures, often in elegant forms, but which have sometimes the effect of concealing their complexion, their faces in many cases being entirely covered with them. This process they call tattooing. They have been found to be all very nearly in the same state of civilization—the very children of nature; some of them indeed gentle in manners, but all addicted to serious vices; carrying on their petty wars with savage ferocity, and making lawful spoil of the persons and properties of every stranger who comes in their way, and can be mastered. As the climate of their islands renders little attention necessary in clothing or habitations, their arts with respect to these grand objects of more civilized communities were very simple; but in regard to instruments for procuring food and carrying on war, they display great ingenuity, though the want of metal has been a serious drawback. Their canoes they manage with great dexterity, and the ingenuity of their fishing tackle can only be exceeded by their skill in using it. Their hooks, however, are only made of pearl shells, bones, and hardwood.

LANGUAGE AND GOVERNMENT.—Dispersed as the Polynesians are, and rarely and purely accidental as any communication between distant islands must have been, it is nevertheless certain that the different dialects which they speak are all referable to the same common language, which seems still to form the original portion of the Malay; but their origin, with the time and manner of their migration and settlement in these innumerable islands, are problems which still remain to be solved. In manners, customs, institutions, superstitions, and religion, the general accordance of the Polynesians is as remarkable as in the case of their language. They have all the same form of government, the authority of which is generally divided among a number of hereditary chiefs, though there are also sometimes a sort of kings or superior chiefs to whom the others are subject, and to whom they pay great respect and even reverence. The people seem indeed in some of the islands, if not in all, to be divided into three classes or castes, the chiefs, the free proprietors, and the lower class, or serfs. In the whole of Polynesia the nobility are incredibly proud, and hold the people in a degree of humble subjection, of which it is difficult for people in Europe to form an idea. In Tahiti the distinction of caste was formerly carried to such an extent in the case of the royal family, all the members of which were regarded as sacred in the highest sense of the word, that whatever any of them happened to touch became sacred also; if the king entered a house the owner was forced to abandon it; and if he walked on a footpath it was death for a plebeian to walk on it afterwards. In the Friendly Islands the castes are still better defined; but the priestly caste ranks highest, the high-priest or Tooitonga taking precedence of the king himself. That singular institution indeed, or superstition, called *taboo*, by virtue of which the king, the nobles, and the priests contrived to appropriate any thing to themselves, was lately prevalent throughout the whole of Polynesia. By means of it the people were contented to be robbed of their property, and to suffer without murmuring any privations which might be imposed upon them. When their houses were tabooed, they dared not enter them; when their taro-roots, or their hogs were tabooed, they surrendered them without a struggle, when the morais or temples were tabooed, they dared not approach them. In short, whenever this mystical word was proclaimed, all action in reference to the matter or thing tabooed, became forbidden to the people.

RELIGION.—Their religion is polytheistic; every family has its guardian spirit, whose image they set up and worship; but they have also a god or gods of a superior order, whom they call Atooa or Eatooa, or some other form of the same word; but to these they address their prayers only in times of the greatest distress, or on some peculiar exigency; supposing them too exalted to be troubled with matters of less moment than the illness of a chief, storms, general devastations, or some other great calamity; and on these occasions they sometimes propitiate the deities with human sacrifices. Their priests are numerous, and have plenty of employment; they are required to be present and to officiate on all occasions of births or deaths, feasts or

sickness, and are the physicians as well as the clergy of the islands. They generally believe in a future state of existence; but not in a place of punishment; for they believe that all will enjoy degrees of eminence and felicity in proportion as they have been acceptable to the gods while on earth. They regard indeed the spirits of their ancestors as exalted into eatooas, and seek to secure their favour by offerings and prayers. Every sickness and untoward accident they consider as a judgment; and on all such occasions the priest is employed to pacify the offended deity. They believe also in dreams; but it were endless to repeat their superstitious notions, which in fact they only hold in common with savages in every part of the world; though unhappily some of their most cruel and most unnatural customs are connected with them.

DIVISIONS.—Some of the islands are collected into groups of various dimensions, while others are scattered solitarily, far in the ocean. The groups are exceedingly different in their number and extent, as well as in the nature of the islands that compose them; the following classification will be found to embrace them all:—1. *The Bonin* or *Arzobispo Islands*; 2. *The Ladrone* or *Marian Islands*; 3. *The Carolina Islands*, including the *Palaos* or *Pelew Islands* at the one extremity, and the *Ralick*, *Radick*, *Marshall's*, and *Gilbert's Islands* at the other; 4. *The Feejee* or *Fiji Islands*; 5. *The Tonga* or *Friendly Islands*; 6. *Navigator's* or *Samoa Islands*; 7. *Cook's* or the *Hervey Islands*; 8. *The Society*, *Georgian*, and *Low Islands*; 9. *The Austral Isles*; 10. *The Marquesas* and *Washington Islands*; 11. *The Hawaiian* or *Sandwich Islands*; 12. *The Kermadec Isles*; and 13. *The Scattered Islands* unconnected with these groups.

§ 1. *The Bonin Islands* or *Islas del Arzobispo.*

These are a group of small islands situate to the south-east of Japan, between 24° and 30° N. lat. and 140° and 150° E. long. They are 89 in number; but 19 of these are only reefs or shoals. The northern islands are inhabited by a Japanese colony. One of the largest, named by Captain Beechy *Peel Island*, contains a harbour called Port Lloyd, which is situate in 27° 5′ N. lat., and 142° 11′ E. long. Water, wood, turtle, fish, and the cabbage-tree, are abundant. A number of British subjects have recently settled on the Bonin Islands, from which they carry on a contraband trade with Japan, or engage in the whale fishery. To the south of the Bonin Islands, properly so called, is a volcanic group, where there are still active volcanoes in *Sulphur*, *St. Alexander's*, and *St. Augustine's* islands. To the south-east are the scattered islands of *Guadalupa*, *Malagrida*, *Grampus*, *Volcano*, and *Meares*; to the west, *Kendrick*, *Dolores*, and *Borodino*.

§ 2. *Ladrone* or *Marian Islands.*

This group extends from south to north between 12° and 21° N. lat. and 144° and 146° E. long. They all belong to the Spanish Government of the Philippines; but only the five southmost are inhabited; all the others being entirely uninhabited, and overrun with wild cattle, hogs, and goats. Their geological formation is almost entirely volcanic, and they seem to be merely so many fragments of land of a very barren and unpromising aspect. The coasts consist chiefly of black and brown rocks, while the interior rises into hills and even mountains; but they also contain fertile valleys, and abound with every thing necessary to human subsistence. *Guam*, *Guajam*, *Guahan* or *San Juan*, the largest of these, contains the capital and seat of Government, named *Agana*, which has a population of 500. The others are: *Saypan* or *St. Joseph*; *Rotta*, the most populous after Guam; *Aguigan*, and *Tinian*. The last two are remarkable for the monumental remains of the ancient inhabitants. In the Island of *Arigan* a small Anglo-American colony has been planted with the permission and under the domination of the Spaniards. *Assomption* and *Pagan* are noted for their volcanoes; but Captain Beechy found the latter not only quiescent and free from smoke, but covered to the summit with vegetation, and rising to an elevation of 2026 feet.

§ 3. *The Carolinas* or *Caroline Islands.*

These, including the Pelew, Ralick, Radick, and Marshall's Islands, extend through forty degrees of longitude, between 133° and 173° E. and between 3° and 16° N. lat. The Carolinas Proper are classed by Captain Lutke into forty-six groups, containing several hundreds of isles and islets. The largest of them seems to be *Ualan*, which is 24 miles in circumference, divided by a valley into two mountain masses, the summits of which rise respectively to 1854 and 1867 feet above the level of the sea. In productions they resemble the rest of Polynesia, except that the bread-fruit abounds only in the eastern islands, and the hog only in the Palaos. They are situate in a very tempestuous part of the ocean, and are exposed to violent hurricanes; yet their inhabitants are more addicted to the seafaring life than most others of the Polynesians. They even equip large sailing barks, in which they maintain a commercial intercourse with the Ladrones. The *Palaos* or *Pelew* Islands form a western appendage to the Carolinas, from which they do not differ materially in character. They are of moderate elevation, rise into beautiful hills, and are well wooded; but they are bordered by dangerous coral reefs. They became an object of interest in Britain towards the end of last century, in consequence of the shipwreck, on one of them, of the Antelope, Captain Wilson, whose crew was most hospitably received by the natives. The principal island is *Babelthouap*. *Ralick*, *Radick*, *Marshall*, and *Gilbert* islands, to the east and south-east of the Carolinas, consist of a crowd of low coral islets, affording but a scanty supply of food, and entirely destitute of any land animals except rats. The inhabitants are described more favourably than almost any other in the South Seas, as friendly, courteous, and amiable; free from the thievish propensities and dissolute conduct that are so general. To the southward of the last named groups are the small islands of *Grand Coral*, *St. Augustine*, *Nederlandish*, *Pegster*, *Enderbury*, *Independence*, *Jesus*, &c.

§ 4. *The Feejee*, *Fidji*, or *Viti Islands*

Are situate to the south of the preceding groups, and to the eastward of the New Hebrides. The largest and most important is named *Viti-Levou*; the next, *Vanoua-Lebau* or *Pau* or *Paou* or *Savage*

wood *Island*, for the supply of which article it has been much resorted to by the Anglo-Americans. *Mywolla* or *Nawihi Lewcos*, *Amboa* or *Bao*, is remarkable for its extent and its peak, which has an elevation of 3600 feet. The islands are well peopled by a race, who, if not altogether negroes, have at least several negro features; and are probably of the same lineage as the Haraforos of Malaysia. Though somewhat advanced in civilization, they are, nevertheless, fond of war, perfidious, ferocious, and incontestibly habitual cannibals. To gratify this horrid propensity they make war, murder, kidnap, and absolutely rob the grave of its prey; and it is said, on credible authority, that 200 human bodies have been known to be devoured at one great feast.—(*As. Journal, Oct.* 1838, p. 103.) The whole group, and even individual islands, are divided into petty independent states, which are often at war with each other. The total number of islands is reckoned to be two large, two small, and fifteen smaller, besides innumerable islets, shoals, and reefs.

§ 5. *The Tonga* or *Friendly Islands.*

This group consists of four principal islands named *Tonga* (*Tongataboo* of Cook), *Anamouka*, *Vavao*, and *Eoua*, besides a great number of islets and rocks. They formed lately one state under King Finow I., but are now divided among a number of independent chiefs. Tonga is the largest and most populous; it is about 100 miles in circumference, but perfectly flat, and rises only a few feet above the level of the sea. The soil, however, is very rich, and carefully cultivated, so that it supports a numerous population. Anamouka is said by early voyagers to have had two active volcanoes; and there is still one which is very active, in *Tafoua*, a little to the north. *Vavao* and the islands which surround it consist of masses of barren rocks, of compact crystalline limestone, from 30 to more than 100 feet high, and many of them inaccessible. Vavao itself, however, is covered with timber, and contains the best harbour in the group; excellent, perfectly landlocked, of great extent, and with numerous entrances, all to the west. To the westward is the Island of *Latte*, which contains a lofty peak. The *Hapai Islands* lie midway between Tonga and Vavao; and form a cluster of 30 or 40 small coralline islands, of which about the half are inhabited. The principal island is *Lefuga*. The inhabitants of all these islands are of a dark brown complexion, and many of both sexes present almost perfect models of the human figure. Their behaviour to Captain Cook was so friendly, that from that circumstance he gave their islands the name which they now bear. They have exhibited, nevertheless, in more recent times some of the worst features of the savage character; their wars are carried on with reckless ferocity, and they make no scruple to murder the crews of such vessels as fall into their hands. They are equally perfidious and cruel to strangers; and yet among themselves they are said to be well-behaved, and even ardent in their attachments.

§ 6. *The Navigator's* or *Samoa* or *Hamoa Islands.*

These islands are situate to the north-east of the Fidji and Friendly Islands; they are eight in number, named *Maûna*, *Orosenga*, *Ofu*, *Tutuila*, *Upolu*, *Manone*, *Aborima*, and *Savaii*. The parallel of 14° S. and the meridian 170° W. pass through the centre of the group. Manûa is circular, and so high as to be visible at sea for 40 or 50 miles, with a bold and lofty shore. Tutuila is a fine romantic island, 80 or 100 miles in circumference. Upolu is from 150 to 200 miles in circumference, and so lofty as to be visible for 50 or 60 miles, richly verdant to the top, and possessing several fine harbours. Savaii, the largest of the group, is 350 miles in circumference, with mountains visible for 60 or 70 miles, all clothed with noble forests, and presenting a scene of beauty, which in extent and importance yields to that of few islands. Aborima is only two miles in circumference, and 200 or 300 feet high; it is the crater of a volcano, precipitous and inaccessible outside, but forming a fine amphitheatre within. The islands produce abundance of the usual vegetable food of Polynesia, and abound with dogs, poultry, and hogs. The men are of colossal stature, and finely formed; their complexion is very light. In talent and character they much resemble their neighbours.

§ 7. *Cook's* or *the Hervey Islands.*

These are seven in number, between 18° and 23° S. lat., and 157° and 160° W. long., and are named *Mauke*, *Mitiaro*, *Atiu*, *Rarotonga*, *Hervey's Island*, *Aitutaki*, and *Mangaia*. They are, however, small and unimportant. Rarotonga, the largest, is about 30 miles in circumference, surrounded by a reef, and rises into a mass of mountains of romantic appearance. It has several good boat harbours. The others are of much the same character, only moderately hilly, but verdant and beautiful. The state of society is similar to that of Tahiti, and the missionaries have succeeded in converting a considerable number of people.

§ 8. *The Society, Georgian,* and *Low Islands,* with *the Dangerous Archipelago.*

These together form a widely extended group, situate between 134° and 157° W. long., and 14° and 25° S. lat. The western portion is generally named the Society Islands; and the central, including Tahiti, the Georgian; while the Low Archipelago consists of a very numerous group to the east and north-east of the two former. *Tahiti* or *Otaheite*, is the largest of them all. It consists of two peninsular mountain masses, connected by a low isthmus; the larger of which is almost round, with a circumference of nearly 90 miles; and the smaller, oval, with a circumference of 50; both are surrounded by a coral reef. Each of the peninsulas is bordered by a belt of low land, from a furlong to a mile in width, from which the central mountains rise by a slow and gradual slope. The summit of the large peninsula is between 6000 and 7000 feet above the level of the sea, and is said to contain a lake of yellow water, probably the crater of an extinct volcano. There is another curious lake about 1500 feet above the level of the sea, and about a mile in circumference, in the bottom of a deep circular valley, surrounded by precipitous mountains. The lowland and the valleys, with their intervening ridges, are beautiful, being clothed with a great variety of trees and abounding with every vegetable production suited to the soil and climate. Since the beginning of the present century, the guava shrub was introduced from Norfolk Island, and in spite of every effort to check its progress, now encroaches on all the moist and fertile land, so that all the woodlands and bush, for miles in extent, are composed of this shrub, which bears a profusion of large and delicious fruit. The indigenous animals are hogs, dogs, and rats; but saddle horses, imported from South America, are now in general use; cattle are also numerous, and ships may be supplied with beef of good quality at 2d. a-pound. Cats have also been naturalized, and are found to be extremely useful. Common poultry are abundant; and the woods are filled by vast numbers of parrots and pigeons. The shores abound with sea fowl, and the sea with excellent fish. The inhabitants are of an olive colour or light copper. The men are generally above the middle size; the chiefs are almost uniformly tall, muscular, and well limbed; the women of the upper ranks are also tall, with limbs finely turned, and soft and delicate skins; black, sparkling, and expressive eyes; beautifully white and regular teeth; jet black hair, generally ornamented with flowers, and a firm, easy, and graceful gait. They have advanced but little in civilized habits, since the days of Wallis and Cook; their dwellings are still much the same as described by their earliest visitors; and Euro-

pean clothing is adopted, but to a very small extent. They have been nearly all converted to Christianity; but their principal improvement consists in religious observances, and in the acquisition to a great degree of the elements of literary education. They amount to about 15,000 or 20,000, under the pastoral care of eight missionaries. At Tahiti and all the Society Islands, elephantiasis prevails to a great extent, not only among the natives, but also among the Europeans. The commerce of the island is confined to the exportation of pearl shells and pearls, sugar, cocoa-nut oil, and arrow root; and it is conducted entirely by foreigners, the natives not possessing any vessel larger than a double canoe. The island, however, is much frequented by British and American shipping, and consuls from both nations have been appointed to reside at Tahiti. The government is administered by a king or queen, and in the districts by chiefs, who form a sort of feudal aristocracy. But the power of the monarch is absolute, and he is sole proprietor of the lands of the island. The revenue consists of taxes on cloth, oil, pigs, and arrow root. The other principal islands of the Georgian and Society group are: *Eimeo*; *Teturoa*; *Tapamanoa* or *Saunder's Isle*; *Huaheine*; *Raiatea* (*Ulitea* of Cook); *Otaha*, *Bolabola* or *Borabora*; and *Maurua*. They are all, like Tahiti, lofty, volcanic, and fertile; and their inhabitants are generally better Christians than the Tahitians. The *Low Islands* and *Dangerous Archipelago* consist of a few high or hilly islands, and 70 or 80 groups of islets surrounding lagoons, like the attollons of the Maldives, besides many mere reefs. The Dangerous Archipelago is deserving of the name; for numerous coral reefs only a few feet above water obstruct navigation, while currents and strong squalls add to the risk. Most of the lagoons have harbours accessible to shipping.

§ 9. *The Austral Isles*

Form a long chain to the southward of the Society and Low Islands, and might indeed be considered as a part of the same group. The principal are *Rimatara*, *Oheteroa* or *Rurutu*, *Toobouai*, *Raivaroi*, *Osborne*, *Oparo*, *Pass*, and *Rapa*. They are high, fertile, and beautiful. To the south-south-west of Rapa, at the distance of about 640 miles, is a solitary reef named *Lancaster*.

§ 10. *The Marquesas* and *Washington Islands.*

These are properly one group; the former name was bestowed upon them by Mendana their first Spanish visitant in 1595, in honour of the Marquis of Mendoça, the viceroy of Peru; the latter name has been applied by Anglo-American voyagers to one portion of the group, in honour of their great president, as having been first explored by them. The centre of the group may be reckoned about 9° 30′ S. lat., and 139° 30′ W. long. They belong to the class of high islands; their mountains, some of which rise to the height of 5000 or 6000 feet, are extremely broken and craggy, with a sandy belt of land between them and the sea; but the intervening valleys are singularly fertile and picturesque, being copiously watered by streams, which form numerous cascades, one of which, in Noukahiva, is said to have a fall of 2000 feet. The men are described as tall, robust, and among the most finely formed of the human race; their complexion even is said by some voyagers to be little darker than that of Europeans; but is completely hid in the elder people by tattooing. Captain Waldegrave, however in 1833, says that their complexion is a dark copper. The women have handsome features, but a slouckling gait and ill formed limbs; and are not remarkable for modesty or propriety of conduct. The character of the people is that which generally belongs to savages. In their ordinary intercourse they are friendly, open, and engaging; but they carry on war with the most deadly ferocity, piercing the brain of the vanquished enemy, and eagerly drinking his blood. The Islands are divided among a number of independent chiefs and tribes. The principal islands are *Noukahiva*, *Oouhouga*, *Federation* (*Hood Island* of Cook), *Ohitwee* or *Dominica*, *Mohaee* or *Sir Pedro*, *Fatouiva* or *Madalena*, *Tuoutta* or *Santa Christina*, *Lincoln*, *Onayeo* or *Trevennen*, *Halioi*, &c.

§ 11. *The Hawaiian* or *Sandwich Islands.*

These form a solitary group far to the north of those we have been describing. They are thirteen in number, eight of which are of moderate size, while the other five are mere islets. They are situate between 19° 30′ and 22° N. lat., and 155° and 160° W. long. The names of the eight larger islands are: *Hawaii* or *Owhyhee*; *Maui* or *Mowee*; *Kahoolawe* or *Tahoorowee*; *Morokai*, *Morokeo* or *Mowee*; *Ranai* or *Lanai*; *Oahu* or *Woahoo*; *Kauai*, *Tauai* or *Atooi*; *Nihau* or *Oneheow*. They all are hilly and mountainous, exhibiting in strong contrast luxuriant verdure and volcanic sterility, and some of them present a very forbidding aspect. The soil is chiefly composed of decayed vegetable and volcanic matter, and is capable of producing any thing; indeed, its fault is that of being too rich. The native vegetable productions are yams, taro, sweet potatoes, plantains in great variety, bread-fruit, sugar-cane, nono, ohaa, turmeric, ginger, cotton, and sandalwood. European and West India fruits flourish, and require little attention. Taro forms the principal food of the natives; but many European vegetables are now produced, and sold in the markets; particularly tobacco, melons, water melons, rice, grapes, cucumbers, cabbages, beans, oranges, pine-apples, and the cloth plant. The indigenous quadrupeds found by Captain Cook were hogs, dogs, and rats; but there are now horses, asses, bullocks and goats; fowls, ducks, and geese are abundant. The people call themselves Hawaiians, after the principal island. The common people are of moderate stature; but the chiefs, both male and female, are remarkable for their great size and flabby obesity. Their complexion is olive. They are now a mild race, tolerably docile and capable of improvement; they are expert at athletic exercises, and as swimmers, are unrivalled. In 1836 the population of the inhabited islands was as follows:

Hawaii,	39,193	Kahoolawe,	85
Oahu,	27,798		
Maui,	24,155	Total,	108,304
Tauai or Atooi,	9,927	Total in 1832,	129,814
Molokai,	6,000		
Lainai,	1,290	Decrease in four years,	21,423

The Hawaiians have been Christianized by American Calvinistic missionaries, who are supported by a society in the United States; but their system of instruction is so entirely religious, and so exclusively directed to the observance of the Calvinistic forms of worship, and the inculcation of Calvinistic doctrines, that it has proved of less social advantage to the people than might have been expected. The labours of the missionaries consist exclusively in preaching, and in teaching schools. They have undoubtedly exercised a very beneficial influence on the people, who may now be called a Christian nation; but they have Christianized without civilizing them. They have overlooked the fact that the Bible teaches neither political economy nor agriculture. The government, in consequence, remains in all respects the same as it was before the missionaries landed. It exhibits a decidedly monarchical character; there being one sovereign chief or king, under whom subordinate chiefs keep the people in the most abject dependence. To the missionaries, however, is due the credit of having reduced the language to writing; they have also translated the Bible into the native tongue; and from the mission press there is now issued a journal called the Hawaiian Monitor, filled with extracts from the Bible, scraps of natural history, and other subjects calculated to interest the people.

When first discovered by Cook, the inhabitants were in the same state of civilization as the other Polynesians; but the islands being most conveniently situate as a station for vessels sailing between China and the north-west coast of America, they were in consequence frequently visited both by Europeans and Americans, who introduced some of the arts, and not a few of the vices of Europe. The islands formed likewise so many independent states; but towards the end of last century and the beginning of the present, they were all subjected to one monarchy by King Tamehameha I., who seems to have fully appreciated the advantages of European improvements. He was a great reformer as well as a conqueror, but adhered tenaciously to the faith and customs of his forefathers; and it was only his son and successor Riho-Riho, or Tamehameha II. who abolished idolatry, so far as connected with the government, and laid the foundation of social improvement among his subjects. This happened in 1819: in the following year missionaries were first allowed to settle in the islands; and though the novelty of the new religion has now lost its effect, and the people have relapsed, in a great measure, into their former habits, yet the seeds of civilization have been sown among them, and may at some future time produce good fruits.

Honororu or *Honolulu*, in the island of Oahu, is the seat of government and trade. It is a considerable town, containing 6000 or 7000 inhabitants, and several comfortable houses; and is protected by a small fort. As a port it possesses many advantages, and supplies for shipping are abundant, and reasonable in price. The commerce, which is chiefly carried on by Anglo-Americans, consists in the importation of cattle from California and Mexico, for which either Chinese or American produce is returned; or of sandalwood, and furs from the north-west coast of America, for the Chinese market.

Hawaii or *Owhyhee*, the largest island in the group, and indeed in Polynesia, is above 100 miles in length from north to south, and about 70 or 80 in breadth, forming a sort of triangle with irregular sides. It contains three lofty volcanic mountains, and, besides these, contains also the largest active volcano at present known. *Mouna-kea* or *Mouna-kaah* (White Mountain) rises to the elevation of 13,764 feet above the level of the sea; *Mouna-roa* or *Mouna-Loa*, to 13,430; and *Huararai* or *Whararai*, to 8457. The ascent of Mouna-kea is comparatively easy. Up to 8700 feet it is covered with luxuriant vegetation; from that point to 12,000 feet, the flanks of the mountain are broken into deep chasms and ravines, interspersed with numerous small extinct craters; at 12,700 feet, a vast table-land or plain is spread out, covered with sand, gravel, stones, and scoriæ, above which rise eleven peaks or humps, forming the summits of the mountain, which, however, do not reach the line of perpetual snow. The ascent of Mouna-roa is more difficult; the limit of vegetation rises to 10,724 feet; but all above that is an immense dome of lava, entirely destitute of verdure; and on the very summit is an enormous crater, 6¼ miles in circumference, enclosed in a larger one, which is 24 miles round. Both of these mountains were ascended, and their elevations barometrically ascertained, by Mr. David Douglas, the botanist, in January 1834.—(*Journal R. Geog. Soc. Lond.* IV. 333.) They are both situate considerably inland, and form together the nucleus of the island. Huararai is situate on the west coast, but has not been in activity since 1800. There are many other dormant or extinct craters; but *Kirauea* or *Kirura* excels all the others in extent and terrific grandeur. It is situate at the eastern base of Mouna-roa, about 3873 feet above the level of the sea, according to Mr. Douglas, or, according to others, 4104. It differs from all other volcanoes in not forming a cone-shaped mountain; it is, on the contrary, a vast sunken pit, of an oval but somewhat irregular shape, about 1000 feet deep, with very steep and almost perpendicular sides. The bottom consists of half-cooled scoriæ, intermixed with torrents of earth in igneous fusion, and gases, constantly effervescing, boiling, spouting, and rolling in all directions, like the waves of the sea in a storm, and dashing like an infuriated surf on the edges of its cauldrons. At the south-south-west point is the haule-mau-mau or great abyss, to which the Hawaiians used to consign the bones of their chiefs, and where they made their offerings to the goddess Pele, who presided over the scene. This exhibits a most frightful area of bubbling red hot lava, incessantly changing its level, sometimes rolling long curling waves, with broken masses of cooled crust, to a side, and again furiously turning them back with a terrific noise. Around are blocks of lava, scoriæ, and slags, in every variety of form and combination; here forming deep and rugged precipices of numerous layers, there all dispersed, cracked, and broken. In extent, grandeur, and intensity of action, Kirauea is unrivalled among volcanoes: but, though from time immemorial it has been prodigiously active, it has never been known to overflow, except in the year 1787, when a dreadful eruption took place, which lasted seven days and nights. The accounts given by those who have visited the place are extremely various; which may be accounted for by the circumstance of the interior of the pit undergoing continual changes. Dr. Goodrich Gardner, as he states in a notice read to the Royal Geographical Society, has conversed with natives not more than thirty or forty years of age, who have seen salt water at the bottom of the crater. There were then four ledges of rock between the upper margin and the bottom; it has since filled up so far as to leave only one; and as the others are said to have been of almost equal depth (800 feet) the bottom must have been then nearly at the level of the sea. At the time, there was a saltwater lake at the bottom of the one end of the crater, while lava was boiling up at a little higher level at the other. A new volcano broke out in 1832, on the north-eastern declivity of Mouna-roa, about 20 miles from Kirauea, but has not been active since. Dr. Gardner saw no traces of stratified rocks in the lower regions of Hawaii, near the sea shore; and he states it as a curious fact, showing the influence of moisture on vegetation, that on Mouna-roa the forests are limited to the sides extending from north to south-east, there being hardly any wood on the sides extending from north-west to south-west, which renders the ascent on that side the most easy. A line of craters stretches almost across the island, in a direction east and west to Mouna-roa.

§ 12. *Kermadec Islands.*

These are a small group, consisting of three small inhabited islands, with some desert islets and reefs, situate about midway between the Friendly Islands and New Zealand, in lat. 30° S. The names of the three inhabited islands are *Raoul* or *Sunday*; *Recherche* or *Macaulay*; and *Curtis*. To the south of them are *L'Esperance Rocks.*

§ 13. *Scattered Islands.*

To the westward of the Sandwich Islands extends a long chain of scattered islets and rocks, in the following order: *Bird's Isle*; *Necker*; *Basse Française*; *Gardner*; *Two Brothers Rock*; *Maro Reef*; *Laysan*; *Lisianski*; *Philadelphia*; *Pearl and Hermes Bank*; *Cure*; *Byers*; *Patrocinio*; *Morell*; *Roco de Plata Crespo*; *Rica de Oro* of the Spaniards; *Rico de Oro* or *Lot's Wife*; *Columas*; *Ganges*; *Week's Reef*; *Krusenstern Rock*, to the south-west of Laysan; and *Mellish Bank*, north of Byers.

Between Gilbert's Islands and the New Hebrides on the west; the Fidji, Friendly, and Navigator's Islands, on the south; the Society, Low Islands, and Marquesas, on the south-east; and the Sandwich Islands on the north, the following may be mentioned: *Howland*, *Arthur*, *Kemin's*, *Jervis Birney*, *Phœnix*, *Sydney*, *Duke of York's*, *Duke of Clarence's*, *Solitaria*, *Danger* or *St. Bernardo*, *Duke Alexander I.*, *Humphrey*, *Suvarof*, *Peregrino*, *Penrhyn*, *Woodstock*, *Caroline*, *New York*, *Starbuck*, *Volunteer*, *Maldon*, *Brook*, *Bunker*, *Christmas*, *Palmyra*, *Washington*, *Fanning*, *Walker's*, *Smith's.*

To the eastward of the Low Islands:—*Oeno, Gambier, Pitcairn, Elizabeth, Ducie's, Easter, Sala-y-Gomez, Waihou. Gambier Islands*, consist of five large, and several smaller islands, all within one reef, through which there is a navigable ship channel to the lagoon. The largest rises 1428 feet above the level of the sea. *Pitcairn Island* is only three miles in length by one in breadth, but has acquired some notoriety as being the place where several of the mutineers of the Bounty, in 1789, established themselves, and planted a small colony. It is volcanic, of a fertile soil, and its peaks rise about 1000 feet above the level of the sea. Its village, named Adamstown, is situate on the north side, in 25° 4′ S. lat., and 130° 16′ W. long. *Easter Island*, or *Vahou*, 20° E. of the Low Islands, in the direct route between them and Cape Horn, is only 20 miles in circumference, but is bold and rocky, strewed with lava, and contains numerous volcanic craters, which are now extinct. It formerly contained some traces of ancient civilization, in the shape of colossal statues, representing, though rudely, the upper parts of the human body; but these have now disappeared.

ANTARCTIC REGIONS.

DURING the sixteenth and seventeeth centuries, cosmographers entertained the opinion that there must be a continent towards the south pole, to counterbalance the mass of land which occupies so large a portion of the northern hemisphere; and, accordingly, in the maps of those centuries, this imaginary continent is represented under the name of *Terra-Australis-Incognita*. This notion continued to prevail till after the middle of the eighteenth century, when it was dispelled by the result of Cook's second voyage; that illustrious navigator having in the years 1772-3-4-5 traversed the Southern Ocean, in different directions, round the globe, without discovering any other land than the Island of Georgia and Sandwich land. In 1816, however, Captain William Smith discovered a group of lofty snow-capt islands, to which he gave the name of *New South Shetland*, to the S. E. of Cape Horn. A few years later, Captain Weddell discovered the *New Orkneys*, in the same quarter, and in 1823 penetrated to 74° 15′ S., the farthest point yet reached. *Trinity Land* was discovered by the Russian navigator, Bellinghausen; and in 1829, two small islands, named *Peter* and *Alexander*, between 69° and 70° S. lat., were also discovered by the Russians. In 1831, Captain Biscoe discovered *Enderby's Land*, under the Antarctic Circle, S. E. of the Cape of Good Hope; and in the following year, *Graham's Land*, *Biscoe Isles*, and *Adelaide Island*, in the same latitude, but lying due south of Cape Horn. In January 1839, a French expedition, under Captain D'Urville, discovered a tract of land, extending about 150 miles, between 66° and 67° S. lat., and 136° and 142° E. long., with a medium elevation of 1300 feet above the horizon. The snow and ice, which covered it, gave its surface almost a level appearance; but little else was observable than ravines, inlets, and projections, which presented not a single trace of vegetation. Captain D'Urville named his discovery *Terre Adelie* (Adelia's Land.) On the very same day, an American scientific expedition discovered land in 64° 50′ S. lat., and 154° 18′ E. long.; and one of the ships, the Vincennes, Captain Wilkes, ran down the coast, from 154° 18′ to 97° 45′ E. long., about 1700 miles, within a short distance of the land, being often so near as to get soundings with a few fathoms of line. In February 1839, Captain Balleny, of London, discovered the *Balleny Islands*, the central one of which lies in 66° 44′ S. lat., and 163° 11′ E. long. In 1840, an expedition was fitted out in Britain, under the command of Captain James Ross, R. N., for the purpose of making scientific, and particularly magnetic, observations in the Southern Ocean, and of ascertaining the position of the southern magnetic pole. Captain Ross first sailed to Hobart town, in Van Diemen's Land, and in November 1840, left that place for his first summer's research in the Antarctic regions. He first steered eastward to New Zealand, and leaving the Auckland Islands on the 12th of December, he proceeded to the southward, and entered the Antarctic circle on the 1st of January 1841, where his farther progress was stopped by the pack-edge of the ice. On 5th of January, he succeeded in entering the ice about 100 miles farther east, in lat. 66° 45′ S., and long. 174° 15′ E.; after penetrating a few miles, he was enabled to make his way to the southward with comparative ease and safety; and on the morning of the 9th, after sailing more than 200 miles through the pack, he gained a perfectly clear sea, and bore away south-west towards the magnetic pole. On the morning of the 11th, land was discovered in the distance, which, as it was approached, rose in lofty mountain peaks of from 2000 to 12,000 feet in height, completely covered with snow, with descending glaciers projecting many miles into the ocean, and presenting a perpendicular face of lofty cliffs. On the 12th Captain Ross landed on a small island, and took possession of the country in the name of Queen Victoria, whose name he has bestowed upon it. The island is composed wholly of igneous rocks, and is situate in 71° 56′ S. lat., and 171° 7′ E. long. Pursuing his course "along this magnificent land," on the 28th "a mountain, of 12,400 feet above the level of the sea, was seen emitting flame and smoke in splendid profusion. This magnificent volcano received the name of *Mount Erebus*, and is situate in 77° 32′ S. lat., and 167° 0′ E. long.; an extinct crater to the eastward, of somewhat less elevation, was called *Mount Terror*;" both after the ships which composed the expedition. The mainland preserved its southerly trending, and Captain Ross continued to follow it till his further progress in that direction was stopped by a lofty barrier of ice, extending E. S. E. Pursuing the examination of this barrier, he traced its continuity for 300 miles, and reached his highest latitude, 78° 4′ S.; but was prevented by the ice from reaching the magnetic pole, or finding shelter for his ships on any part of the coast, which he found at last to terminate abruptly in 70° 49′ S. lat., and 165 E. long.

Besides these new discoveries, there are within the limits of the Southern Ocean several islands, too far distant from any of the great continents to be considered as belonging to them, and therefore not yet noticed in this work. In 1772, two French Captains discovered a group of high and barren islands to the eastward of the Cape of Good Hope, which, from them, have been named *Marion and Crozet's Islands*; the two most westerly were afterwards named by Cook, who passed between them in December 1776, *Prince Edward's Islands*, in honour of the late Duke of Kent, father of her Majesty Queen Victoria. Farther east, between 48° and 50° S. lat., and 65° and 67° E. long., is *Kerguelen's Land*, or the *Island of Desolation*, discovered by Captain Kerguelen in 1772. It is about 100 miles in length, and about 60 in breadth; but, owing to the coldness and moisture of the climate, it is almost totally destitute of vegetation. It is indeed represented as one of the bleakest and most desolate spots on the globe; but fossil wood and coal have been recently discovered in it by Captain Ross, in the course of his scientific expedition to the South Magnetic Pole. It seems to be chiefly composed of trap and other igneous and volcanic rocks, which rise into hills from 500 to 2500 feet high. The coast is deeply indented with bays and inlets, and the whole surface is intersected by lakes and water-courses. North-east of Kerguelen's land are two small solitary islands, named *St Paul's* and *Amsterdam*, which were

discovered by the Dutch navigator Vlaming in 1696. Vlaming, it appears, applied the name of *Amsterdam* to the northern island, and *St. Paul's* to the southern; but the islands have been confounded by English navigators, and the names transposed, so that the southern island is generally called Amsterdam, and the northern, St. Paul's. But, be this as it may, the northern island is situate in 37° 52′ S. lat., and 77° 36′ E. long., and has an elevation of 2760 feet. It is 12 miles in circuit, and in fine weather may be seen from the anchorage of the southern island, a distance of 60 miles, on the same meridian. The latter, the original *St. Paul's*, is 9 miles in length by 5 in breadth, of volcanic formation, without a tree or shrub, and destitute of vegetation, except coarse grass, and a kind of rushes or reeds. It abounds with hot springs, the water of which is wholesome, though somewhat offensive to the smell and taste. It contains a magnificent oval-shaped basin, large enough to contain the whole British navy, which is evidently the crater of an extinct volcano, with deep water, and an entrance 25 yards wide.—(*Journal R. Geog. Soc.* IX. 517. *Staunton's Account of Macartney's Embassy*, I. 256.)

Sandwich Land, discovered by Cook in 1775, between 57° and 61° S. lat., and 27° and 30° W. long., has since been found to consist of a number of islands, which are constantly covered with snow. The *Isle of Georgia*, between 53° 57′ and 54° 57′ S. lat., and 38° 13′ and 35° 34′ W. long., about 31 leagues in length, by 10 in breadth, is also a bleak and barren region, traversed by very lofty mountains, constantly covered with snow; the heat of summer being sufficient only to melt the snow on the low ground of the N.E. side.

ADDITIONS AND CORRECTIONS.

Page 191.—From the result of the census taken 6th June 1841, it appears that the population of Great Britain and Ireland then amounted to about 27,000,000. The return for the three kingdoms, the Channel Islands, and the Isle of Man, is as follows:—

England and Wales,	15,901,931
Scotland,	2,624,595
Ireland,	8,306,362
Channel Islands and Man,	124,079
	26,956,066

Besides the army and navy, and merchant seamen afloat, and all persons travelling abroad, or not under a roof on the night of the 6th of June. Including these, the population may be taken at 27,500,000, which shows an increase of about 2,000,000 since 1831.

P. 241.—*Lancashire. Fleetwood-on-Wyre*, a newly established seaport town, near the mouth of the river Wyre, on the left bank, N.W. of Preston, with which it is connected by a railway. In June 1841, it contained 1509 inhabitants, on a spot which five years before was only a rabbit-warren.

P. 340.—In Table of Provinces, after Cordova, in Andalusia, insert:—
Jaen, 4,608.—266,000.—Jaen, Andujar, Linares, Alcala la Real, Baeza, Baylen, Ubeda.

P. 642.—*Euphrates.* Since this account was written, a secret expedition, consisting of two iron steam-boats, sent out by the East India Company, to ascertain the navigability of the river, has succeeded in ascending the course of the Euphrates, 1100 miles from its mouth. The only obstacle to the navigation consists in the remains of the water wheels used for irrigation. In the short space of 120 miles, nearly 200 were found, about one-third of which are still in operation. They consist of large walls built into the stream, for the purpose of diverting the current to the wheels, which lift up the water by means of clay vessels fixed on their circumference. These walls produce a current of six or seven knots, with a fall of two or three feet, so that this part of the river is difficult, and somewhat dangerous.

P. 663.—*Sinai and Horeb.* According to Dr. Robinson, in his "Biblical Researches in Palestine" recently published, it is Jebel Mousa that is supposed to be the Sinai of Moses; and it is the northern part of it, named Horeb by the Christians, and not the summit, which Dr. R. believes to be the place from which the law was delivered; there being in front of it a plain where the people might have stood, but which cannot be seen from the summit of the mountain. Jebel Katerin is situate to the south-west, and not to the east, of Jebel Mousa, which it overlooks; and the fortified convent of St. Catherine stands on the north-western flank of Jebel Mousa. Upon these points the descriptions of travellers are exceedingly discrepant, and void of precision; and it is from Dr. Robinson's map that we have learned exactly, for the first time, the relative situations of the mountains and convent.

P. 784.—*Ararat* is said to have broken out as a volcano in July 1840. This is a mistake. It was only shattered by an earthquake, which did immense damage to all the adjacent country.

GREAT BRITAIN.

COMPARATIVE STATEMENT of the POPULATION in 1801, 1811, 1821, 1831, and 1841, showing the INCREASE or DECREASE in each County.

ENGLAND.

Counties.	1801.	*Increase per Cent.*	1811.	*Increase per Cent.*	1821.	*Increase per Cent.*	1831	*Increase per Cent.*	1841.
Bedford,	63,393	11	70,213	19	83,716	14	95,483	13·	107,937
Berks,	109,215	8	118,277	11	131,977	10	145,389	10·2	160,226
Buckingham,	107,444	9	117,650	14	134,068	9	146,529	6·4	155,989
Cambridge,	89,346	13	101,109	20	121,909	18	143,955	14·2	164,509
Chester,	191,751	18	227,031	19	270,098	24	334,391	18·4	395,390
Cornwall,	188,269	15	216,667	19	257,447	17	300,938	13·3	341,269
Cumberland,	117,230	14	133,744	17	156,124	10	169,681	4·8	177,912
Derby,	161,142	15	185,487	15	213,333	11	237,170	14·7	272,202
Devon,	343,001	12	383,308	15	439,040	13	494,478	7·8	533,731
Dorset,	115,319	8	124,693	16	144,499	10	159,252	9·7	174,743
Durham,	160,361	11	177,625	17	207,673	22	253,910	27·2	324,277
Essex,	226,437	11	252,473	15	289,424	10	317,507	8·6	344,996
Gloucester,	250,809	12	285,514	18	335,843	15	387,019	11·4	431,307
Hereford,	89,191	5	94,073	10	103,243	7	111,211	2·	114,438
Hertford,	97,577	14	111,654	16	129,714	10	143,341	9·6	157,237
Huntingdon,	37,568	12	42,208	15	48,771	9	53,192	10·3	58,699
Kent,	307,624	21	373,095	14	426,016	12	479,155	14·4	548,161
Lancaster,	672,731	23	828,309	27	1,052,859	27	1,336,854	24·7	1,667,064
Leicester,	130,081	16	150,419	16	174,571	13	197,003	9·5	215,855
Lincoln,	208,557	14	237,891	19	283,058	12	317,465	11·1	362,717
Middlesex,	818,129	17	953,276	20	1,144,531	19	1,358,330	16·	1,576,616
Monmouth,	45,582	36	62,127	15	71,833	36	98,130	36·9	134,349
Norfolk,	273,371	7	291,999	18	344,368	13	390,054	5·7	412,621
Northampton,	131,737	7	141,353	15	162,483	10	179,336	10·9	199,061
Northumberland,	157,101	9	172,161	15	198,965	12	222,912	12·2	250,268
Nottingham,	140,350	16	162,900	15	186,873	20	225,327	10·8	249,773
Oxford,	109,620	9	119,191	15	136,971	11	152,156	6·1	161,573
Rutland,	16,356	..	16,380	13	18,487	5	19,385	10·	21,340
Salop,	167,639	16	194,298	6	206,153	8	222,938	7·2	239,014
Somerset,	273,750	12	303,180	17	355,314	13	404,200	7·8	436,002
Southampton (Hants),	219,656	12	245,080	15½	283,298	11	314,280	12·9	354,940
Stafford,	239,153	21	295,153	17	345,895	19	410,512	24·2	510,206
Suffolk,	210,431	11	234,211	15	270,542	9	296,317	6·3	315,129
Surrey,	269,043	20	323,851	23	398,658	22	486,334	19·7	582,613
Sussex,	159,311	19	190,083	22	233,019	17	272,340	10·	299,770
Warwick,	208,190	10	228,735	20	274,392	23	336,610	19·4	402,121
Westmoreland,	41,617	10	45,922	12	51,359	7	55,041	2·5	56,469
Wilts,	185,107	5	193,828	15	222,157	8	240,156	8·2	260,007
Worcester,	139,333	15	160,546	15	184,424	15	211,365	10·4	233,484
York (East Riding),	110,992	16	134,437	14	154,010	10	168,891	14·6	193,676
City of York & Ainstey,	24,393	12	27,304	12	30,451	17	35,362	8·3	38,322
York (North Riding),	158,225	7	169,391	11	187,452	2	190,756	7·2	204,662
York (West Riding),	565,282	16	655,042	22	801,274	22	976,350	18·2	1,154,924
England,	8,331,434	14½	9,538,827	17½	11,261,437	16	13,091,005	14·5	14,995,508

WALES.

Counties.	1801.	*Increase per Cent.*	1811.	*Increase per Cent.*	1821.	*Increase per Cent.*	1831.	*Increase per Cent.*	1841.
Anglesey,	33,806	10	37,045	21	45,063	7	48,325	5·3	50,890
Brecon,	31,633	19	37,735	16	43,603	10	47,763	11·8	53,295
Cardigan,	42,956	17	50,260	15	57,784	10	64,780	5·5	68,380
Carmarthen,	67,317	15	77,217	17	90,239	12	100,740	6·	106,482
Carnarvon,	41,521	19	49,336	17	57,958	15	66,448	22·	81,068
Denbigh,	60,352	6	64,240	19	76,511	8	83,629	6·7	89,291
Flint,	39,622	17	46,518	15	53,784	11	60,012	10·8	66,547
Glamorgan,	71,525	18	85,067	19	101,737	24	126,612	37·	173,462
Merioneth,	27,506	4	30,924	11	34,382	3	35,315	11·1	39,238
Montgomery,	47,978	8	51,931	15	59,899	9	66,482	4·1	69,220
Pembroke,	56,280	7	60,615	22	74,009	9	81,425	7·9	88,262
Radnor,	19,050	9	20,900	7	22,459	9	24,651	2·1	25,186
Wales,	541,546	13	611,788	17	717,438	12	806,182	13·	911,321

SCOTLAND.

ACCOUNT of the POPULATION within each PARLIAMENTARY BOUNDARY in 1841.

NAME of CITIES or ROYAL & PARLIAMENTARY BURGHS.	PERSONS.			NAME of CITIES or ROYAL & PARLIAMENTARY BURGHS.	PERSONS.		
	Males.	*Females*	*Totals.*		*Males.*	*Females*	*Totals.*
CITIES returning *Two* Members each:—				*Kilmarnock District* —			
Edinburgh,	58,642	75,050	133,692	Dumbarton,	2,163	2,239	4,402
				Kilmarnock,*	9,189	10,209	19,398
Glasgow,	120,963	136,629	257,592	Renfrew,	949	1,064	2,013
				Rutherglen,	2,816	2,806	5,622
CITIES and TOWNS returning *One* Member each: —				Port Glasgow,*	3,134	3,804	6,938
Aberdeen,	27,277	35,623	62,900	Total,	18,251	20,122	38,373
				Kirkaldy District—			
Dundee,	29,210	34,615	63,825	Burntisland,	811	1,048	1,859
				Dysart,	3,228	3,830	7,058
Greenock,*	17,440	18,481	35,921	Kinghorn,	606	889	1,555
				Kirkcaldy,	2,634	3,070	5,704
Paisley,*	22,064	26,061	48,125	Total,	7,339	8,837	16,176
				Leith District —			
Perth,	8,498	9,783	18,281	Leith,*	11,979	14,047	26,026
				Portobello,*	1,403	2,184	3,587
COMBINED BURGHS, & TOWNS or DISTRICTS returning *One* Member :—				Musselburgh,*	2,958	3,408	6,366
				Total,	16,340	19,639	35,979
Ayr District —				*Montrose District* —			
Ayr, and Newton upon Ayr,	7,148	8,699	15,847	Aberbrothwick, or Arbroath,	6,781	7,810	14,591
Irvine,	1,937	2,657	4,594	Brechin,	2,675	3,232	5,907
Campbeltown,	2,902	3,885	6,787	Forfar,	3,659	4,340	7,999
Inverary,	547	593	1,140	Inverbervie or Bervie,	424	440	864
Oban,*	604	794	1,398	Montrose,	6,130	7,681	13,811
Total,	13,138	16,628	29,766	Total,	19,669	23,503	43,172
Dumfries District —				*St. Andrew's District*—			
Annan,	1,519	1,802	3,321	Anstruther, Easter,	448	566	1,014
Dumfries and Maxwelltown,	5,847	7,506	13,353	Anstruther, Wester,	148	191	339
Kirkcudbright,	1,072	1,534	2,606	Crail,	520	707	1,227
Lochmaben,	621	707	1,328	Cupar,	2,341	2,821	5,162
Sanquhar,	804	915	1,719	Kilrenny,	791	928	1,719
Total,	9,863	12,464	22,327	Pittenweem,	576	733	1,309
				St. Andrew's,	1,947	2,518	4,465
Elgin District —				Total,	6,771	8,464	15,235
Banff and Macduff,	2,354	2,965	5,319	*Stirling District* —			
Cullen,	711	853	1,564	Culross,	237	365	602
Elgin,	2,259	2,957	5,216	Dunfermline,	6,741	6,582	13,323
Inverury,	832	899	1,731	Inverkeithing,	840	987	1,827
Kintore,	219	245	464	Queensferry,	589	644	1,233
Peterhead,*	2,465	3,293	5,758	Stirling,	5,022	5,723	10,745
Total,	8,840	11,212	20,052	Total,	13,429	14,301	27,730
Falkirk District —				*Wick District* —			
Airdrie,*	6,681	5,735	12,416	Cromarty,*	809	1,130	1,939
Falkirk,*	3,999	4,210	8,209	Dingwall,	764	962	1,726
Hamilton,*	4,074	4,650	8,724	Dornoch,	201	250	451
Lanark,	2,140	2,346	4,486	Kirkwall,	1,222	1,819	3,041
Linlithgow,	2,092	1,932	4,024	Tain,	839	1,028	1,867
Total,	18,986	18,873	37,859	Wick,	2,595	2,927	5,522
Haddington District—				Total,	6,430	8,116	14,546
Dunbar,	1,360	1,627	2,987	*Wigtown District* —			
Haddington,	1,796	1,981	3,777	New Galloway,	212	218	430
Jedburgh,	1,518	1,759	3,277	Stranraer,	2,166	2,723	4,889
Lauder,	578	570	1,148	Whithorn,	681	832	1,513
North-Berwick,	470	551	1,021	Wigtown,	848	1,022	1,870
Total,	5,722	6,488	12,210	Total,	3,907	4,795	8,702
Inverness District —							
Forres,	1,299	1,899	3,198				
Fortrose,	409	542	951				
Inverness,	5,009	6,583	11,592				
Nairn,	1,032	1,356	2,388				
Total,	7,749	10,380	18,129				

* Burghs which have a Parliamentary Representation, but are not Royal Burghs.

INDEX OF PLACES.

☞ The letters B or G, C, I, L, M, R, at the end of names, signify *Bay* or *Gulf*, *Cape*, *Island*, *Lake*, *Mountain*, *River*. Names beginning with the prefix *New*, will be found under N; those with the prefix *Saint*, *San*, *St.*, under S; those with *Fort* or *Port*, under F or P. Spanish names beginning with X or J, may be looked for under either of these letters, the pronunciation of both being the same, and the use of them indifferent. Names beginning with C or K, if not found under the one of these letters, may be looked for under the other. Russian, Turkish, and other oriental names usually beginning with J, if not found under that letter, may be looked for under I or Y, the latter of which gives the correct pronunciation.

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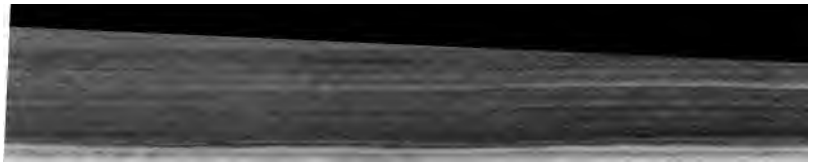
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